ImageMaker Software Suite User's Manual

Revision 4

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Microtech Systems

Introduction

With over 20 years of experience building Industry leading software and solutions, Microtech is proud to present you with our **ImageMaker Software Suite**. Contained herein you will find everything necessary to produce, monitor, and maintain disc publishing and duplication jobs with a Microtech production system.

Starting with **MyDisc**, our flagship software, users can build jobs, prepare graphics for printing on the discs and specify the number and priority of publishing jobs along with many other functions. For straight duplication situations, our **ImageMaker EZ** application makes it a snap to make as many copies of a source image as your system can possibly crank out. Our **CD-Remote** resource manager allows programmers to manipulate our API for custom job processes and even create their own user interface. With our **ImageAligner** feature (optional) we also enable you to produce professional quality looking discs by adding unique text and graphics to discs that have previously been pre-printed or silk-screened.

MyDisc is the software that the entire Industry is raving about and our competitors can't compete with. Using MyDisc, the operator of a Microtech production system can drag-and-drop audio or data files to create discs, design their own professional quality disc prints and specify the number and priority of publishing jobs. MyDisc has the most complete set of features and widest format support around while still remaining the easiest to use software available.

ImageMaker EZ is the easiest duplication application available. Just browse to a source disc or image file, tell ***ImageMaker EZ*** how many copies you want to make and you're done.

CD-Remote is the Resource Manager that works behind the scenes to ensure that all jobs and hardware functions perform without a hitch. Its easy API allows users to customize their job processes and even create their own custom user interface.

DiscPrint is our disc label creation application. It is included in both ***MyDisc*** and ***ImageMaker EZ***, but can run alone to create labels that are later used with one of the other products. Additionally, ***DiscPrint*** can be used as a standalone application in order to manually print labels onto one or more discs.

ImageAligner is Microtech's proprietary hardware option which enables the operator using a digital camera mounted over a disc printer to take a photo of a pre-printed or silk-screened disc. It will then determine where to align additional text or graphics and allow the production system to take it over from there. This process is ideal for companies intending to serialize unique discs, personalize branded discs and even establish version control for beta testing.

Thank you for choosing Microtech. We are confident you will enjoy your system for many years to come.

MyDisc
Making Custom Discs

One of the most creative uses of a **Microtech** production system is making custom discs with content (data files or audio tracks) from any of several sources: local hard disk, local network, as well as remote computers via the Internet.

The tool used to make custom discs is the ***MyDisc*** program, included with the disc production system. This chapter covers the use of this program.

MyDisc

MyDisc can also be used to create a **disc image** (a file on hard disk containing the image of the CD or DVD) that you can later use to make disc copies. This is called **premastering**, and it's covered starting on page 43

Creating custom discs with *MyDisc* consists of the following two tasks:

- **Selecting the files** to put on disc.
- **Designing the print layout** with the text that will print on the disc.

Each task has its own on-screen "tab" that contains the tools and fields necessary to complete the task. When the files have been selected and the print layout has been designed, a third tab where some final choices are made before actually creating your custom discs is used. (One or more copies of this custom disc can be made.)

Starting *MyDisc*

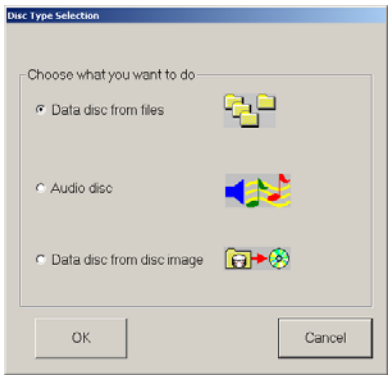
To start the ***MyDisc*** program, double-click its icon on the Windows desktop (shown at the right). When the program starts, a colorful "splash screen" will appear followed by a dialog screen asking what type of disc to make.

Note: The first time ***MyDisc*** is used, some help panels pop-up when the program is started. These are intended to guide first-time users through the disc-making process. After more experience with the program, these help panels can be removed by checking the item marked **Do not show this again** on each panel.

Choose the Type of Disc to Make

Data discs are fundamentally different from audio discs. Below is the dialog box that pops up and shows the choices. For DVD discs use the "create a data disc".

Click the button for the type of disc to create, then click **OK**.



The next window shows the file selection "tab". The file selector used when creating data discs is slightly different from the one used for audio discs.

Three Steps to Making an Image or a Disc

Saving and Restoring Disc Jobs: After the disc has been set up by selecting files and folders (or audio tracks) and the label has been designed to print, the disc can be saved as a job. Later, to make that same disc, the job can be restored. See page 15 for details.

Regardless of the type of disc being created, there are three steps to follow, each with a corresponding "tab" in ***MyDisc***. These tabs are selected by clicking on the tab's label along the top of the window, below the menu and toolbar. The tabs are:

1. Select Files	select the files and folders (or audio tracks) to put on disc
2. Create Disc Label	design what is to be printed on the disc
3. Make Disc	make a disc from the selected files or tracks

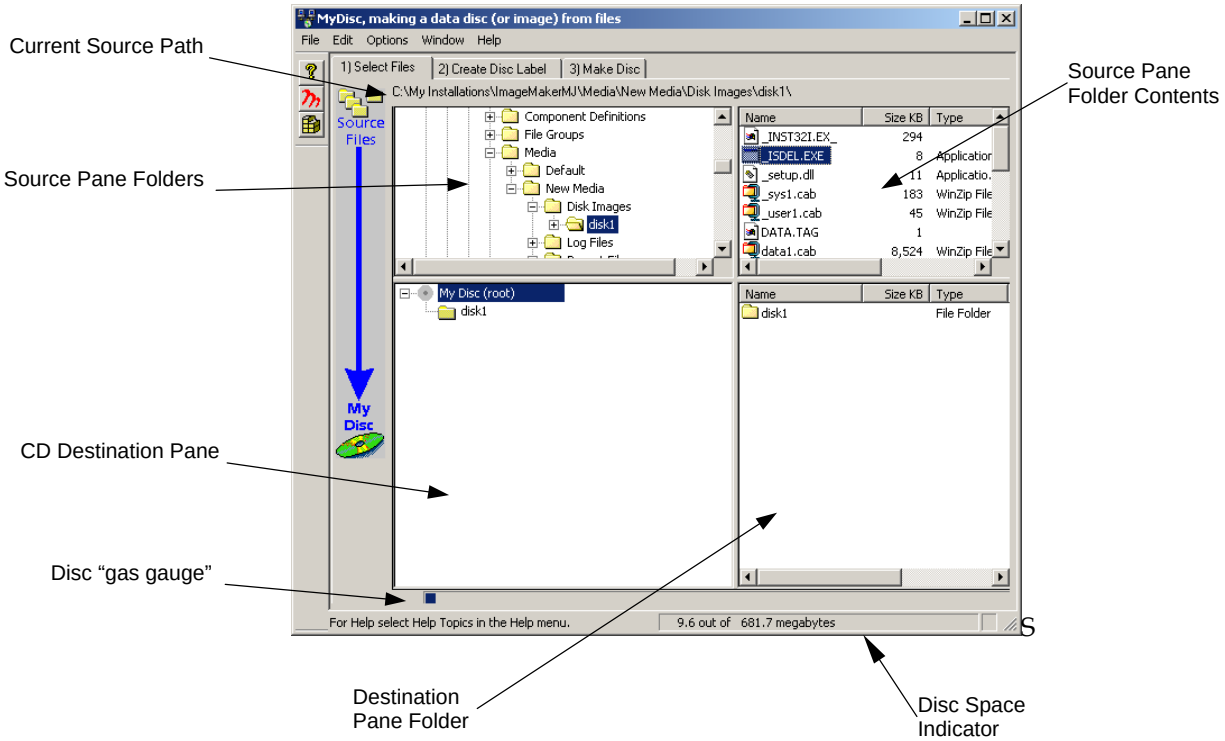
Selecting Files & Folders for a Data Disc

There are two ways to reach this screen:
1) select "**Make a data disc**" at the **Disc Type Selection** dialog when the program starts; or
2) select **New Disc** from the **File** menu, then selecting "**Make a data disc**".

When choosing to make a data disc, ***MyDisc***'s file selection tab shown below will be displayed.

The selector is divided into 4 "panes". The upper two panes are the "source"; the lower two are "destination". Select the files to go on the disc using the "click and drag" method. Drag item(s) from either of the upper panes to the lower-left pane.

The panes are divided to show folders (on the left side) and the contents of the currently selected folder (the right side). Items can be dragged from either top pane to either bottom pane:



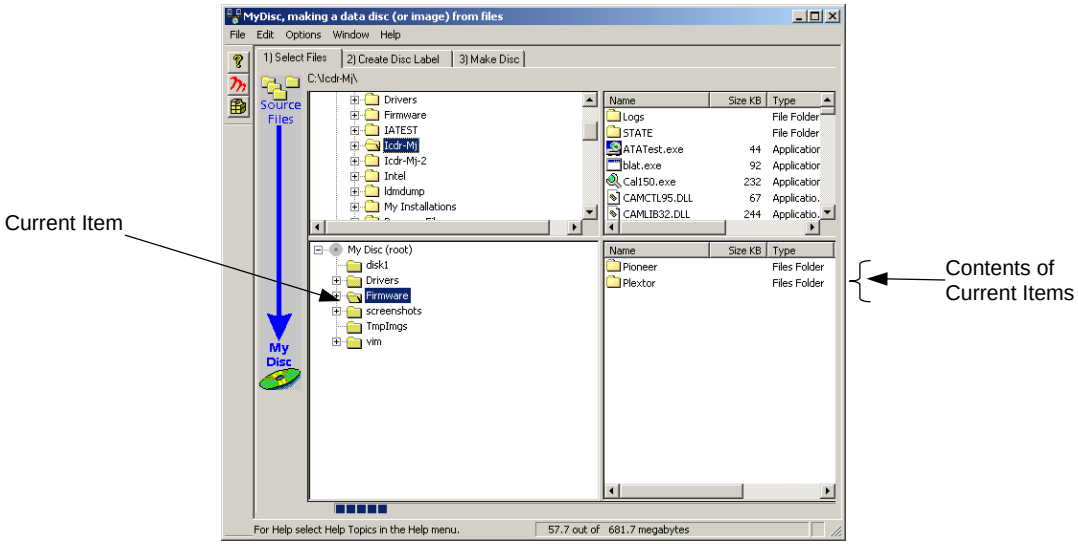
To Place an Entire Folder on Your Disc

Drag the folder from the upper-left pane to the lower pane. This brings in the folder and its entire contents (including all folders inside).

To Add a Particular file or Folder from the Currently Selected Folder

Click and drag the file or folder from the upper-right pane to the lower right pane.

In the following section, the *current item* refers to **whatever item is displayed in the lower right pane**. (This will always be the contents of a folder in the lower left-hand pane.) In the display shown below, the folder **Sales Letter** (contents shown in the lower left pane) is the current item.


Current Item
Contents of Current Items
MyDisc, making a data disc (or image) from files
File Edit Options Window Help
1) Select Files
2) Create Disc Label
3) Make Disc
Source Files
My Disc
For Help select Help Topics in the Help menu.
57.7 out of 681.7 megabytes

To choose where an item will go on the disc

- If the dragged item is dropped directly over a folder in either lower pane, the dragged item will go into that folder.
- If the dragged item is dropped **outside of any items** in either lower pane (in the clear space in the pane), the dragged item will go into the **root of the disc**—that is, at the "top level" of the disc volume.

As the disc is built remember to check the "gas gauge" to see how much space is left on the disc. As items are added, the gauge extends to the right. The "disc space used" indicator at the lower right shows the amount of disc space used in megabytes.

Deleting File Selections

To remove any selection from the disc being created (in either of the two lower panes) choose the selection (file or folder) by clicking on it, then either:

Press the **delete** key or

Click on **Cut** from the **Edit** menu.

When files have been selected for the data disc, skip ahead to **Designing a label for your Disc** on page

Selecting Multiple Files and Folders

There are two kinds of multiple selections for files and folders:

1. Range selections**, where a** contiguous group of folders or files **is selected by marking the start and end of the range**
2. Random selections**, where folders or files are selected and added individually**

Marquee selections are also known as **rubberband** selections, because the box you drag out with the mouse wraps around the selection like a rubberband

To make a range multiple selection

There are two ways to make a range selection. One is by using the **Shift** key and clicking, the other is by using **marquee selection** with the mouse only.

To make a range selection by using the keyboard and clicking

1. Select the first item in the range by clicking on it.
2. Move to the last item in the range. (Scroll down in the pane if necessary.) Hold down the **Shift** key, then click on the last item to select the entire range.

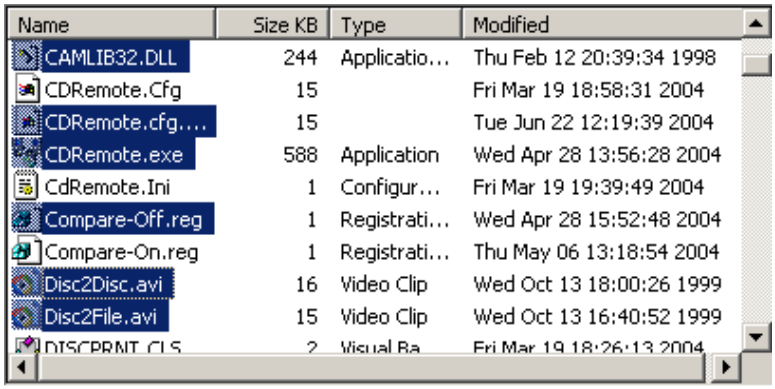
To make a range selection by using a marquee selection

1. Start the marquee selection by clicking in the empty space *outside* of the name of the first file or folder to be selected.
2. Drag the marquee selection by moving the mouse with the button held down. The marquee box is a dotted line box with its corner marking the start of the selection. Drag this selection to cover the range of files to be selected.
3. Complete the marquee range selection by letting go of the mouse button after all the items have been selected.

When the last item has been selected by either using the **Shift** key or letting go of the mouse, the entire range will be highlighted to show that it's selected.

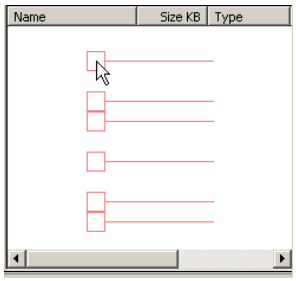
To make a random multiple selection

1. Select the first item by clicking on it.
2. Select each subsequent item by holding down the **Control** key and then clicking on the item to add it to the selection. Keep this key held down until all items have been selected. Each selected item in the random selection will be highlighted.


Name
Size KB
Type
Modified
CAMLIB32.DLL 244 Applicatio... Thu Feb 12 20:39:34 1998
CDRemote.Cfg 15 Fri Mar 19 18:58:31 2004
CDRemote.cfg.... 15 Tue Jun 22 12:19:39 2004
CDRemote.exe 588 Application Wed Apr 28 13:56:28 2004
CdRemote.Ini 1 Configur... Fri Mar 19 19:39:49 2004
Compare-Off.reg 1 Registrati... Wed Apr 28 15:52:48 2004
Compare-On.reg 1 Registrati... Thu May 06 13:18:54 2004
Disc2Disc.avi 16 Video Clip Wed Oct 13 18:00:26 1999
Disc2File.avi 15 Video Clip Wed Oct 13 16:40:52 1999

To drag a range or random selection

Once a range or random multiple selection has been made, click **within the selection** in order to drag it. Click directly on any of the highlighted items, then hold down the mouse button to drag the selection. When a multiple selection is dragged, a "ghost" outline of the items being dragged will appear (see illustration below).



To cancel a range or random selection

To change a multiple selection, click on any item inside the pane where the selection was made to cancel. (The item clicked on will be selected as an individual item.

Deleting File Selections

To remove selection(s) from the disc being created (in either of the two lower panes), choose the selection (file or folder) by clicking on it, then either:

1. press the **delete** key or
2. click-on **Cut** from the **Edit** menu.

Once the files have been selected for the data disc, skip ahead to **Designing a Label for Your Disc** on page 11.

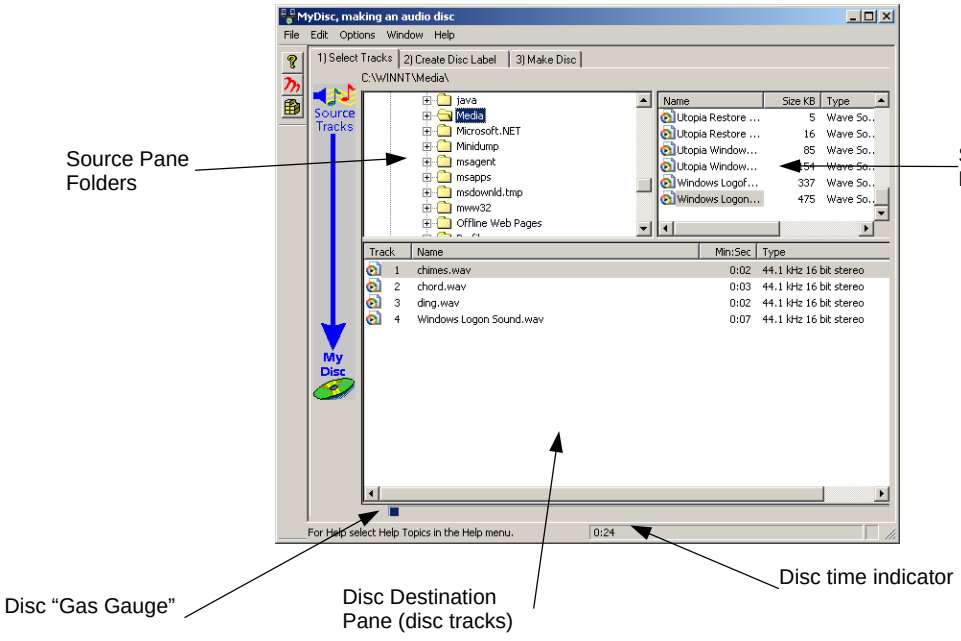
Selecting Tracks for Your Audio Disc

There are two ways to reach this screen: 1) by selecting "**Make an audio disc**" at the **Disc Type Selection** dialog when the program starts; 2) By selecting **New disc** from the **File** menu, then selecting "**Make an audio disc**".

After choosing to create an audio disc, MyDisc's track selection tab (shown below) is displayed.

The selector is divided into three "panes". The upper two panes are "sources", while the lower one is a "destination" pane. To create a disc, click and drag the desired tracks from the upper-right pane to the lower pane.

The panes are divided to show folders (on the left side) and the contents (tracks) of the currently selected folder (the right side). Only files that are valid audio tracks will be shown in the current folder. As tracks are added, the disc "gas gauge" and disc time indicator are updated to show how much space has been used on the disc. (The time indicator shows the total play time in minutes:seconds.)



Deleting Audio Track Selections

To remove any tracks from the disc being created (in the lower pane), select the track by clicking on it, then either

1. press the **Delete** key or
2. click-on **Cut** from the **Edit** menu

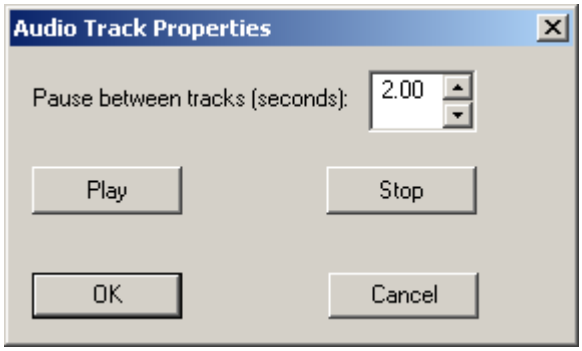
Arranging Audio Tracks on a Disc

The order audio tracks are recorded on a disc can be arranged as the tracks are selected. The order shown in the bottom pane is the order in which the tracks will appear on the disc. The tracks can be rearranged in the lower pane by simply picking up and moving tracks.

To move a track, "click and drag" it to the desired location.

Changing the Pause Between Audio Tracks

Tracks on an audio disc are separated by **pauses –** small amounts of silence. ***MyDisc*** automatically places exactly two seconds of silence between tracks. The amount of pause between the end of a track and the beginning of the next one can be changed either by double-clicking the track in the lower pane, or by right-clicking (using the alternate mouse button) on the track. This opens the **Audio Track Properties** dialog box:



Set the desired pause time either by typing the time in directly, or by using the "spinner" control (the little arrows) to change the time by hundredths of a second. Click **OK** to change the pause time, or **Cancel** to leave the pause time unchanged. To eliminate the pause entirely, set the time to 0.

The pause time for multiple audio tracks can be changed by selecting all of the tracks together (using the Shift or Control keys as described on page 9), then right-clicking over the selection to open the **Audio Track Properties** dialog.

Playing Audio Tracks

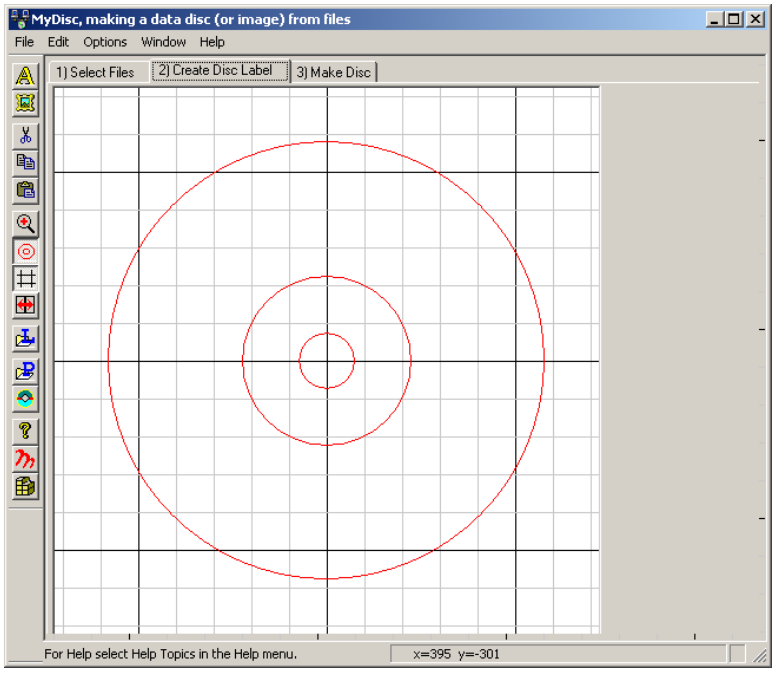
(Your computer needs to have a sound card and speakers or headphones installed in order to use this feature.)

The **Audio Track Properties** dialog (described above) allows preview of a selected audio track. Click the **Play** button to play the track, click **Stop** when finished.

Creating the Disc Label

Discs made with ***MyDisc*** can be printed with text and graphics. Use the **Create Disc Label** to design a label.

Printing discs is a whole topic unto itself, and it's covered in detail under "**Printing Discs**" with a Microtech production system on page ??**.** Here is a brief overview of this tab.


MyDisc, making a data disc (or image) from files
File Edit Options Window Help
1) Select Files
2) Create Disc Label
3) Make Disc
For Help select Help Topics in the Help menu.
x=395 y=-301

The gridded area which contains two circles is the workspace where the printing layout for your disc is designed. The *Disc Layout Editor* shows the disc much as it will print (the grids and circles are layout guides and do not print).

The printing toolbar along the left hand side contains various tool buttons. The most frequently used tools are the **text tool** and the **picture tool**.

This text tool adds text to the layout. Click on the disc workspace where the text is to go and click this button. Enter text in the **Text Properties** dialog, make any other changes to settings there and click **OK**.

This picture tool adds a picture to the layout. Click on the disc workspace where the picture is to go, and click this button. Select the picture file in the file selection dialog.

After adding text or pictures, they can be moved and resized on the layout.

Leave the entire disk label blank and nothing will be printed.

Refer to page 73 for more details on designing a disc label.

Making Discs

What Format should be used to Make the Disc?

(If you already know the answer to this, skip ahead to page 13.)

Each disc format is a particular "flavor" of disc on the logical level (how data is arranged on disc). Since certain computer systems (or other appliances which read discs) can only read certain formats, it's important to use the correct format.

Making an audio disc

There is only one audio DISC format. Skip ahead to page 13 to make your disc.

Making a data disc

Several disc formats are available. The table below shows the most common computer systems, along with the format best suited for that system. ***These guidelines are only general; there are many exceptions and special cases***. If you are not sure what format disc to make, check with the person who will be reading the disc to find out what format, if any, they'd prefer.

An **ISO 9660** format can be read by virtually any computer system. There are however, severe limitations using this format with regard to allowable length and characters for file and folder names.

FOR THIS COMPUTER SYSTEM	USE THIS DISC FORMAT
Windows (95/98/NT/2000/XP)	Joliet
Windows 3.x	ISO 9660 (w/DOS names option)
DOS	ISO 9660 (w/DOS names option)
Macintosh	ISO 9660 Level 2
Unix (Linux, Sun, etc.)	ISO 9660 Level 2 with Rock Ridge

Making a DVD

There are two format choices available:

FOR THIS COMPUTER SYSTEM	USE THIS DISC FORMAT
Unix (Linux, Sun, etc.)	Joliet (with Rock Ridge)
All other systems	UDF bridge

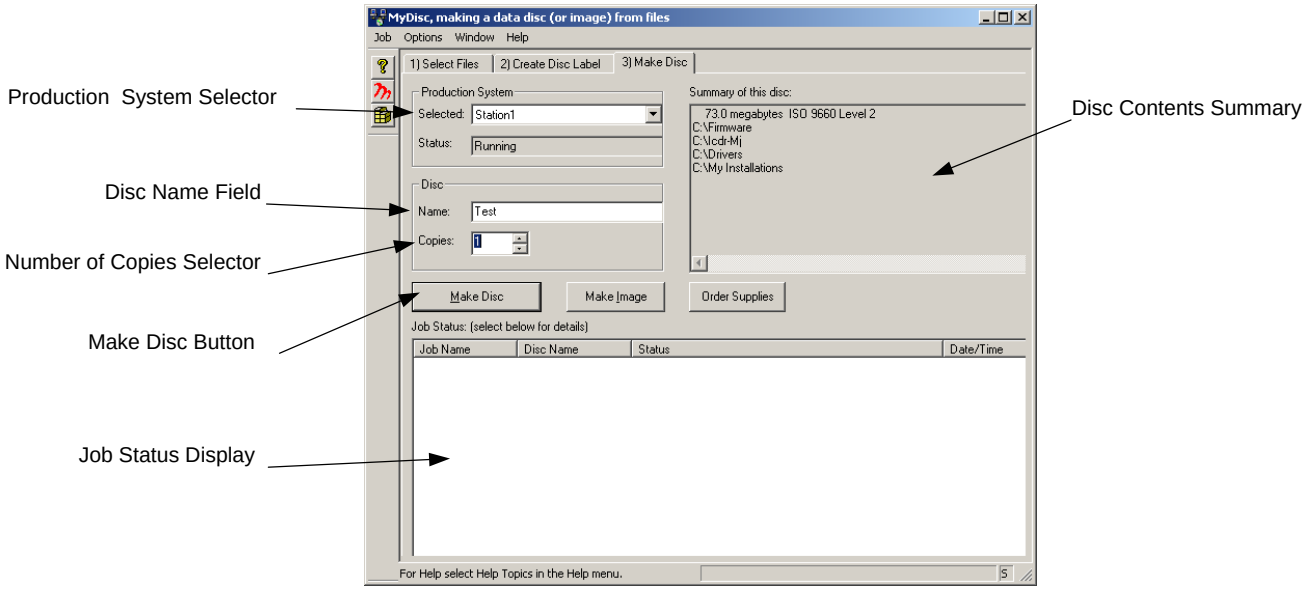
UDF bridge is the most commonly used format for creating DVDs. Occasionally Joliet/Rock Ridge is used.

To choose the disc format, open the **Preferences** dialog (choose **Preferences** from the **Options** menu). Use the **CD Data** tab for CD formats (see page 22 for more details) or the **DVD Data** tab for DVD formats (see page 24 for details).

Making The Disc

Once the files and folders (or audio tracks) have been selected, the label to be printed on the disc is created and the correct data disc format is selected, go to the last tab and make the disc. Click on the Make Disc tab to open it.

1. **Select the disc production system** to make the disc
2. **Assign a name** to the disc
3. **Set the number of discs** to make
4. **Check** on any other disc-making jobs which are in progress



Production System Selector

Chooses which production system to use (if more than one is available). The **Status** field underneath shows whether the selected system is running.

Disc Name Field

Where a name for the disc is entered. This name will appear as the volume name of the disc when the disc is read (file name). See page 16 for details on choosing a name (certain disc formats impose restrictions on the allowable length and characters in disc names).

Number of Copies Selector

Sets how many copies of the current disc will be made. The default number is one. A different number may be typed in or use the "spinner" controls (up- and down-arrows) to change the number.

Make Disc

This button starts the disc-making process, using the current settings in this tab.

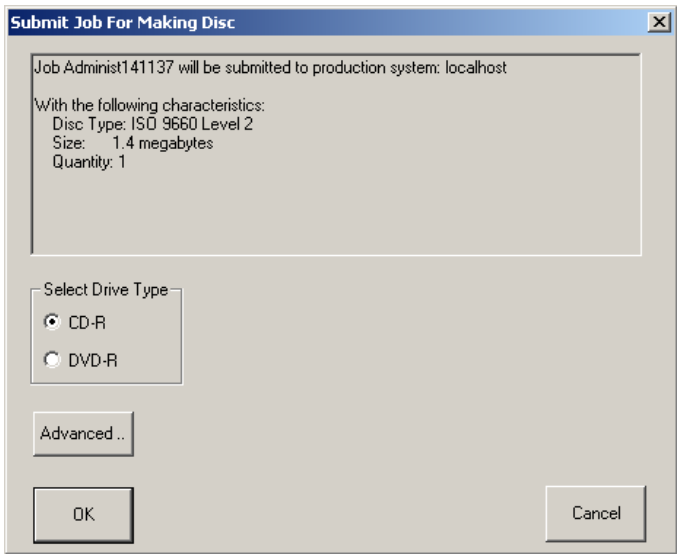
Disc Contents Summary

Shows a list of the selections made for the disc. The first line shows how much data will go on the disc, followed by the disc format. (For data discs, the amount is given in megabytes of data; for audio discs, the total play time of the disc is shown.) Each selection on the disc (file or folder for a data disc, or audio track for an audio disc) will have an entry in the summary.

Job Status Display

This area provides a way to check on any disc making jobs currently in progress. Each current job is shown with status information. See **Checking Disc Jobs** on page 16 for details.

To make the disc(s), click **Make Disc**. A final confirmation dialog, which has further options will appear. This dialog, **Submit Job** is shown below.



The first item in this dialog, labeled **Select Drive Type**, only appears if the selected disc production system has been set up for making both CD-R and DVD-R discs. (This option in ***MyDisc*'s Preferences** settings is covered on page 26.) Otherwise, this area of this dialog will be blank.

If this choice in this dialog box is displayed, select the type of disc (CD-R or DVD-R) to make.

There are four other options here, and more available under the **Advanced** button (for copy protection and test-writing discs). The options in this dialog are:

Priority

This setting affects how soon a job will be processed, compared to other jobs. The higher the number, the higher the job priority. Change the number by typing it in or using the "spinner" controls. (Priority values range from 1 to 10.)

Verify Discs After Writing

Note: Audio discs can only be verified in the read drive.

Check this option if discs are to be verified against the original data. Verification compares the original source files with the data written to each disc to make sure it's identical. While this does take some time, it is necessary to be sure that each disc is a 100% accurate copy of the content you've selected.

Send Email When Job is Done

If email notification has been set up for the production system, check this item to have an email message sent to the specified recipient when the job completes.

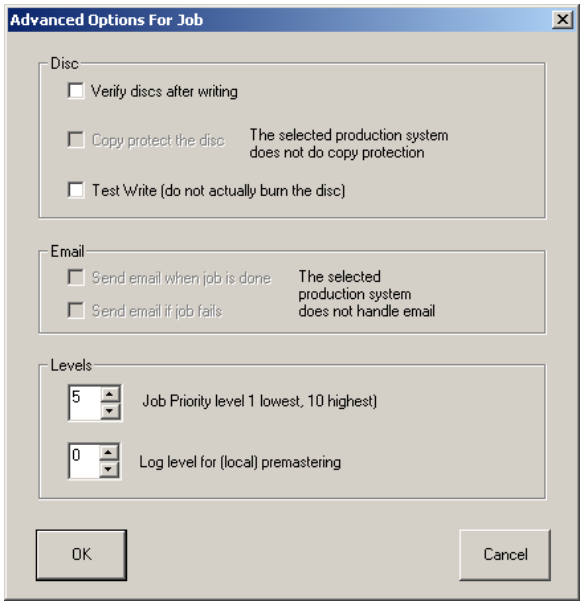
Send Email if Job Fails

If email notification has been set up for the production system, check this item to have an email message sent to the specified recipient if an error occurs during this job.

Enable email event notification must be on to use these options. See **Setting Up Email Notification for Microtech System Events** on page 116 for more information. Otherwise, these options will be "grayed-out" and unavailable.

Advanced Options for Making Discs

Options under the **Advanced** button (in the **Submit Job** dialog, described above) are:



Log Level for Premastering

This item should only be changed for troubleshooting purposes. Keep it set at its default setting (**0**).

Copy Protect the Disc

If copy protection on the disc production system has been setup, this item can be checked to enable copy protection for the discs about to be made.

Test Write

If testing on the production system is being done, this item can be checked to do a test write on the discs about to be made. The discs will not actually be recorded. **Be sure this item is *not* checked if you want to burn discs**.

Click **OK** in this dialog to change any of these settings, or **Cancel** to cancel any changes.

Naming the Disc

When discs are made with ***MyDisc***, the name entered in the **Disc Name Field** on the **Make Disc** tab will become the name of the disc. This name will appear, at some location, when the disc is opened on a computer. This name can be up to 32 characters long. (Technically, this field is known as the *volume identifier*, or *volume ID*.)

Usage and restrictions on this name field vary from one computer system to another, and depend on the type of disc being made. These restrictions must be taken into account when entering text into this field.

For ISO 9660 Discs

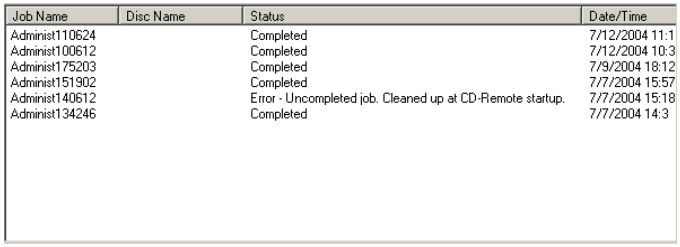
The ISO specification imposes rather severe restrictions on the allowable characters in this field. Only the following characters are allowed: **A-Z** (uppercase only), **0-9**, and the underscore character, _.

For ISO 9660 Level 2 and Rock Ridge Discs

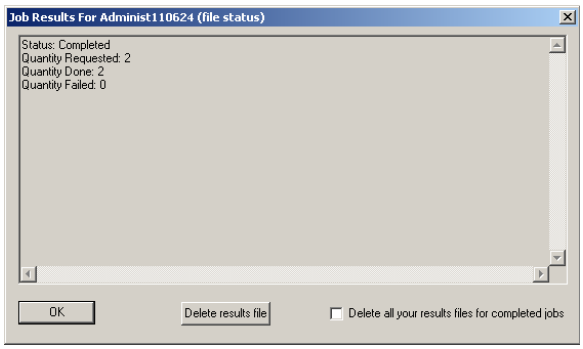
The ISO specifications still apply to this field. However, the operating systems used on the computers that will read these discs will accept a much larger set of characters.

Checking *MyDisc* Jobs

When the **Make Disc** button is clicked, a *disc production job is started*. Check the progress of each job by looking in the job status display area on the **Make Disc** tab. Each job gets a name, which is the user name (the name used to log on to a workstation) followed by a unique number. For instance, if logged on as **Fred**, one job name might be **Fred143839**. (Only your jobs will appear in your job status display.)



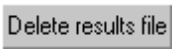
Each job gets an entry in the job status display area, showing job name, name of the disc being made, current job status, and the time the job was last checked or was completed. To see details about a particular job, click on the job's entry to open a *job details window*.



The job details window shows the following information for each job.

- The job name (in the title bar of the dialog)
- The current status of the job
- How many discs ordered (**Quantity Requested**)
- How many discs successfully made (**Quantity Done**)
- How many discs failed or were rejected (**Quantity Failed**)

Removing Job Entries



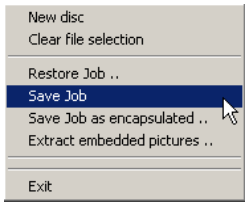
When job status details are displayed, there is an opportunity to remove the job entry from the list (generally only done if the job is completed successfully.) To remove the job status entry, click the **Delete results file** button. To retain the job status information, click the **OK** button to close this dialog. To delete all job results entries for completed jobs, check the item labeled **Delete all your results files for completed jobs** before closing this dialog.

Cancelling Queued Jobs

A job cannot be cancelled once it has started running. A disc making job using ***MyDisc*** can only be cancelled while it is in the queue (waiting to be started.) The job status display area (discussed in the preceding section) will show where the job is in the queue or, if the job has started.

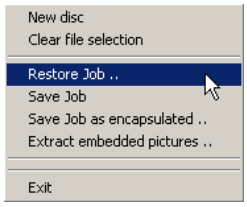
To cancel a queued job, open the job details window by clicking on the job entry in the job status display. In the details window, click the **Cancel** button. The job will be removed from the job status display list.

Saving and Restoring Disc Jobs



All file/track selections and the printing layout for a disc may be saved as a job, and later restored to create the same disc. All of the file selections (file and folders, or audio track selections) and all of the text and pictures added to print on the label will be saved for future use.

After the disc has been set up (with both file/track selections and the printing layout), the disc can be saved from any of the three ***MyDisc*** tabs. To save a disc job, select **Save Job** from the **File** menu. (The **File** menus are different for each of the three tabs, but all have the save/restore job items.)



Later, to re-make that same disc, select **Restore Job** from the **File** menu (from any of the three tabs). The program will automatically set the correct mode, depending upon the saved job.

After a job is restored, changes may be made – adding or removing file selections, and editing the printing layout. Re-save the disc job after making the changes, either under the same job name or a different name.

Where Did My Files Go?

While ***MyDisc*** saves all of the selections when a disc is saved as a job, it cannot guarantee that all the files and folders (or audio tracks) you selected will still be there when that job is restored. Working on a shared network increases the possibility that files may have been moved, renamed or deleted.

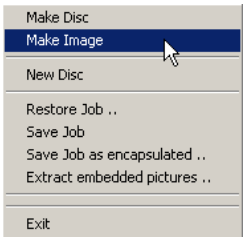
To ensure that all the files selected are still accessible, make sure the **Job cancellation** option in the **Job** tab under **Preferences** is *not* checked. (See page 19 for more information.) This stops the disc job if any explicitly selected files are missing. (This applies only to files explicitly selected in the **Select Files** tab; if a folder containing files is selected; ***MyDisc*** does not keep track of the contents of that folder. The job will be stopped, however, if the folder itself is missing.)

Moving Saved Disc Jobs

A saved disc job can be moved or copied from one computer to another. Jobs are saved in files with a **.jb** "extension". These files can be copied as any other file on a Windows computer, however there are limitations.

When a picture is added to the printing layout for a disc, ***MyDisc*** inserts the location of the file containing the picture in the layout, not the actual picture file itself. If a saved disc job is moved or copied, make sure that any pictures in the layout can be found. One way to ensure this is to only use pictures that are stored on a network that is shared by all computers. (***MyDisc*** uses network file references that works from any computer on the network.) If the picture is stored on a local hard drive, then it will most likely not be found when the job is copied to another computer. (The picture can be re-inserted on the destination computer.)

Making Disc Images with *MyDisc* (Premastering)



MyDisc can be used to make an image of a disc for later use in making copies of that disc. This process is called *premastering*. This is different from saving a disc job. When an image is made, all of the actual contents of the disc—the data files or audio tracks—are saved into an image file. (Saving a disc job saves only the names and locations of the data files, not their contents.) This image file can then be used by the ***ImageMaker* EZ** disc duplication program to make copies of the disc.

To make an image of a disc, select all the files and folders (or audio tracks), as if a disc was to be burned from them. Select the **Make Image** from the **File** menu (on the **Make Disc** tab).

This opens a file selection dialog for the image file that will be created. Locate the disk drive and folder where the image is to be written, and give it a name. (The image will be the size of the disc—potentially up to about five gigabytes for a full DVD). Click to make the image.

After an image file has been created, the image file may be selected with ***ImageMaker* EZ** and any number of disc copies can be made from it.

Setting Preferences for *MyDisc*

MyDisc has many option settings that control important aspects of its behavior. The **Preferences** dialog is divided into several tabs, each one containing options related to a specific aspect of ***MyDisc*** operation.

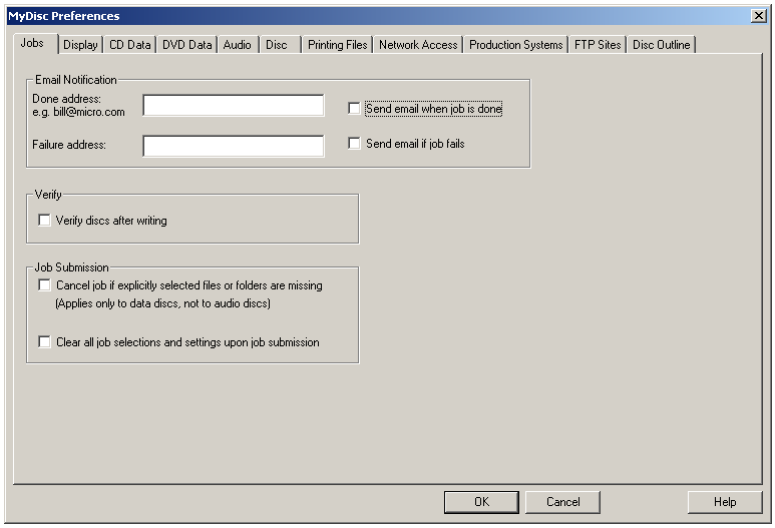
To open the **Preferences** dialog, select **Preferences** from the **Options** menu.

Following is a list of the tabs and the options each contains:

TAB	CONTAINS THESE OPTIONS
Jobs	Options for job execution (email notification, etc.)
Display	What information is shown on-screen
CD Data	Formats for making data CD-ROMs
DVD Data	Formats for making data DVD-ROMs
Audio	Options pertaining to audio CDs
Disc	Physical disc types (CD vs. DVD and data sizes)
Printing Files	Locations of files used in printing discs
Network Access	Options controlling access to files over network and logins
Production Systems	Setting up and finding disc production systems
FTP Sites	Setting up FTP sites as sources for data files
Disc Outline	Physical disc size and shape types (not used on this system)

Job Tab

This tab contains options that affect how disc production **jobs—each separate order for making one or more discs—are handled by *MyDisc*.**



Email Notification

This group of options sets ***MyDisc*** up to send email when jobs are completed and whenever an error occurs. This is useful when discs are being made at a remote site and it is not possible to physically check on the progress of disc jobs.

There are two locations for email addresses: one for notification when jobs complete successfully, the other when errors. A valid email address must be specified (such as **me@mycompany.com**). To enable email notification, ensure that the checkmark item next to the email address is checked (☑).

Note: Audio discs can only be verified in the read drive.

Verify

Check this item (☑) to have all discs made by ***MyDisc*** verified after they are written. Verification compares the data written on each disc to the original source data ensuring every byte is identical. This procedure takes more processing time however, *to be assured that every disc is an absolutely accurate copy of your data, verification is recommended.* (While rare, it is possible for a disc without errors to be made that contains inaccurate data.)

Job cancellation (do not cancel job if files missing)

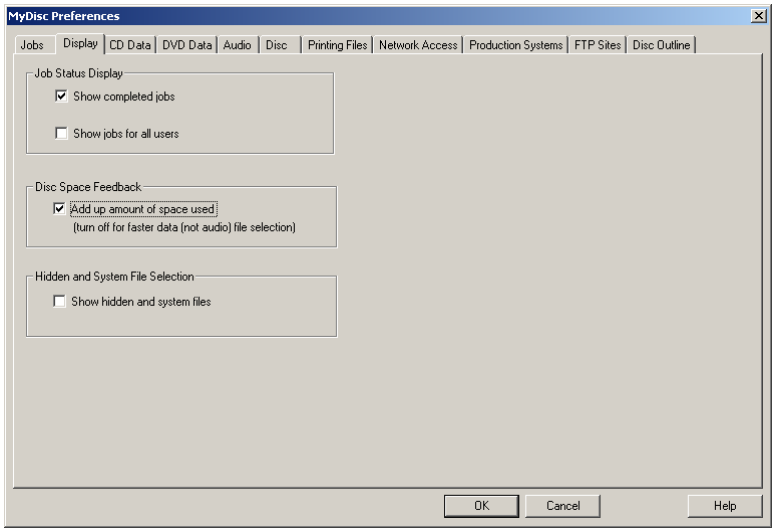
This option chooses whether ***MyDisc*** will allow a job to proceed if any files selected are missing. When files are selected to go on discs, it is possible for those files to be "missing" (deleted or otherwise unavailable) at the time the discs are actually being made. If this item is checked (☑), any job can proceed even if files are missing.

This may result in discs that are missing files. If this option is *not* checked, any missing files will cause the job to be ended automatically with an error.

To make absolutely sure that all the files selected actually get written to your disc, leave this option **unchecked**.

Display Tab

This tab contains options that affect what is displayed on-screen by ***MyDisc*** in various places in the program.



Options affecting the job status display (on the Make Disc tab)

Show completed jobs

If checked, this will show jobs that have completed in the job status display. If not checked, completed jobs will disappear from the display.

Show all user's jobs

If checked, jobs from all users on the selected disc production system will be shown. If not checked, only your jobs will be shown.

Options affecting the file selector (in the Select Files tab)

Add up amount of space used

This option only affects data discs, not audio discs. This option controls whether ***MyDisc*** will keep track of how much space is used on the disc, and display it in the **Select Files** tab. Normally this option is checked to show how much space remains on the disc as files are selected. If this option is unchecked, this process is disabled, speeding up the file selection process. **CAUTION:** If this is disabled, it is possible to add more files than will fit on the disc.

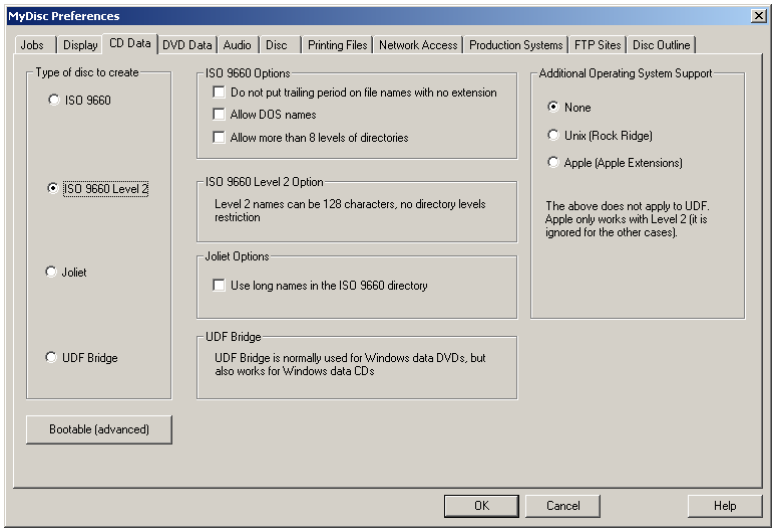
Note: This option only applies to files explicitly selected in the **Select Files** tab. It does not apply to files in folders selected; if a folder is selected, and a file that was in the folder at the time of selection is missing when the job is run, ***MyDisc*** won't detect it. However, if the folder itself is missing, ***MyDisc*** will stop the job if this option is unchecked.

Show hidden and system files

If this option is checked, files considered "system" files and hidden files will appear in the **Select Files** (data discs) and **Select Tracks** (audio discs) tabs when selecting files. If this item is unchecked, these files will not be shown.

CD Data Tab

This tab contains options that affect the formatting of CD-ROM data discs only.



Type of Disc to Create

This choice selects the format for data discs created by ***MyDisc***. It's important to select the proper format for the disc. This depends on the type of computer system the disc will be read on. The choices are:

ISO 9660

Creates discs which can be read by practically any computer system. ISO 9660 imposes some rather severe restrictions, on file and subdirectory names: these names are limited to **8.3** characters (1 to 8 characters for the name followed by a period, with an optional 1-to-3 character "extension"). Only the following characters may be used in file and subdirectory names: **A-Z** (uppercase only), **0-9**, and the underscore character, _. ISO 9660 can not be used if the files being put on disc have so-called **long filenames** (for example, a report called **Sales report-Dec'99.doc**)

ISO 9660 Level 2

Creates discs which are readable by computers using **Microsoft Windows** ("PCs") and by **Macintosh** ("Mac") computers. It allows long names for files and folders.

Joliet

The "native" disc format for computers using use Microsoft Windows operating system. Joliet discs allow long file and folder names.

UDF (Universal Disc Format) Bridge

Usually associated with DVD-ROM discs, it can be used to create CD-ROMs as well.

Each of the preceding disc formats has options in this dialog (except for UDF Bridge). They are listed in order here:

ISO 9660 Options

Do not put trailing period on file names with no extension. If this option is checked, no trailing periods will be added to such filenames. Normally, ***MyDisc*** will always place a period in an ISO 9660 filename, whether or not the filename has an extension. Filenames with no extension will have a trailing period (like **FILE0001.**).

Allow DOS names. If checked, this option partially relaxes the ISO 9660 restrictions on file and directory (folder) names to allow the DOS character set to be used in names. (DOS filenames are still limited to **8.3** characters in length.) The characters which can be used in DOS filenames are uppercase alphabetic letters (**A-Z**), numeric digits (**0-9**) and the following punctuation:

~'!@#$%^&()-_[]{}'

Allows more than eight levels of directories. Normally, ISO 9660 allows only eight levels of directory (folder) nesting. If checked, this option relaxes this restriction to allow directories to be deeper than eight levels.

Rock Ridge. This adds a Rock Ridge directory to the disc for use with computers running the Unix operating system (e.g. PCs running under Linux, Sun computers, etc.) When this option is checked, more than eight-level-deep directories are possible. (ISO 9660 limits directory depth to eight.)

ISO 9660 Level 2 options

The Rock Ridge option is the same as described above for ISO 9660.

Joliet Options

Allow long names in the ISO 9660 directory. Some explanation: Joliet format discs actually contain two complete separate directories for the files on the disc. In addition to the Joliet directory (allowing long filenames, up to 64 characters), there is a second directory. Normally this is an ISO 9660 directory, with all the restrictions on names noted above.

If this option is checked, an **ISO 9660 Level 2** directory is written instead of a regular ISO 9660 directory. The Level 2 directory also allows long file and directory (folder) names.

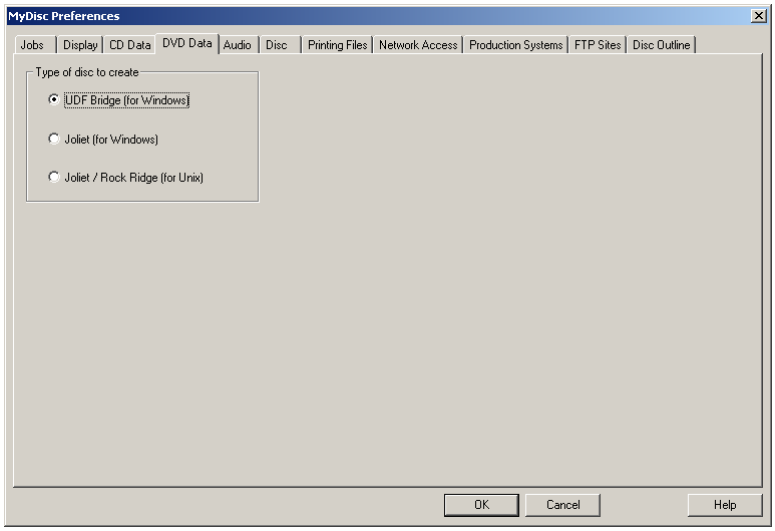
When is this option used? This option is intended when a disc is to be used both with computer systems, which understands Joliet directories, and those which do not, and when the alternate ISO 9660 directory would be too restrictive on filename length and characters.

Rock Ridge

This adds a Rock Ridge directory to the disc for use with computers running under Unix (such as PCs running under Linux, Sun computers, etc.)

DVD Data Tab

This tab contains options that affect the formatting of DVD-ROM data discs only.



The two choices here are for the format to use when creating a DVD-ROM disc:

UDF Bridge

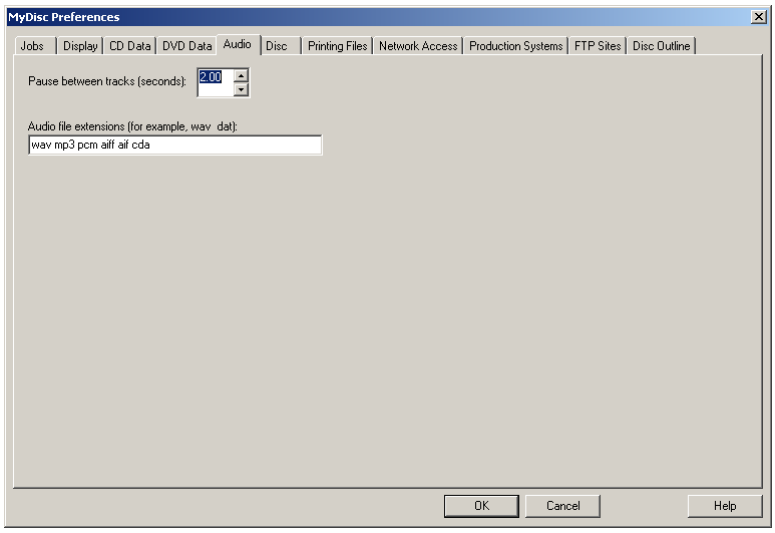
UDF stands for "Universal Disc Format", the most widely-used format for DVD discs. This is the recommended format unless making a DVD that will be read on a Unix computer system.

Joliet/Rock Ridge

Select this format if making a DVD that will be read on a Unix computer system (one running Linux or a Sun computer).

Audio Tab

This tab contains options that affect the formatting of audio discs **only.**



Pause Between Tracks (seconds)

This sets the length of pause (a period of absolute silence) between audio tracks. The default setting is **two seconds**. Type in a new value, or use the "spinner" controls (little arrows) to change the time.

Audio File Extensions

Lists the allowable file "extensions" for audio track files. This list defines the types of files (by file extension) that ***MyDisc*** recognizes as valid audio data files. Only the file types that appear in this list will be displayed in the file selector in the **Select Tracks** tab.

Enter the file extensions in a list, with each item separated by spaces, commas or both (for example, **wav mp3** or **wav, mp3**).

Any file extension may be added to this item, as long as the files using that extension are actually valid audio files. Audio files used by ***MyDisc*** must meet the following criteria:

- The sampling rate must be **44.1 kHz**
- The tracks must be in **stereo (2 channels)**
- They must contain **16-bit samples**

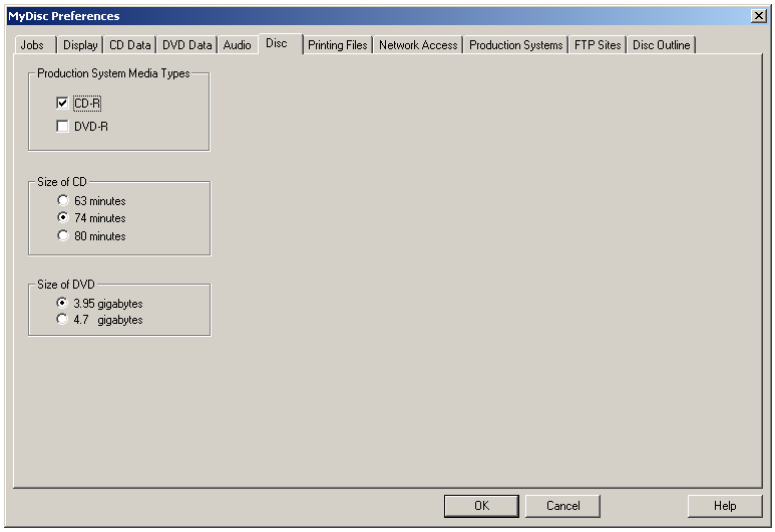
The following are standard, recognized valid audio file types:

TYPE	EXTENSION	NOTES
Wave	.WAV	Most common type of audio file
MP3	.MP3	High-compression format for portable music devices, Internet access, etc.
AIFF	.AIF, .AIFF	Macintosh audio file interchange format
PCM	.PCM	"Raw" audio data (no file header)
Raw	**—any—**	"Raw" audio data (no file header)

MyDisc "validates" the following three audio file formats, which contain file header information: **Wave**, **MP3**, and **AIFF**. All other audio file formats are considered "raw", meaning the file contains only uncompressed audio data (in PCM format) and no header information. ***MyDisc*** has no way of checking the validity (sampling rate, etc.) of raw audio files, apart from playing the track using the **Audio Track Properties** dialog (see page 10).

Disc Tab

This tab contains options that specify the type of discs to be created (CD vs. DVD) and the data characteristics of those discs (the data capacity).



Production System Media Type

This item tells ***MyDisc*** which types of disc media (CD and DVD) are available for use on any disc production systems that can be used to create discs. Either or both of these items may be checked. (Choose the actual type of media for the disc when the job is submitted.) If both CD-R and DVD-R media are available, check both of these items.

MyDisc uses the disc size to gauge how much space is available on a disc when files and folders (or tracks) are being selected. This allows the file selector (the first tab) to show how much space is left, and gives an alert when a disc is nearly full or has been filled. **These disc capacities are approximate only!**

Size of Disc

Determines the data capacity of the any CDs created. (Size is given in terms of how much audio data a disc can hold.) There are three possible sizes available. The default choice (**74 minutes**) is the most common; 63-minute media is rarer; and 80-minute media is becoming more widely used.

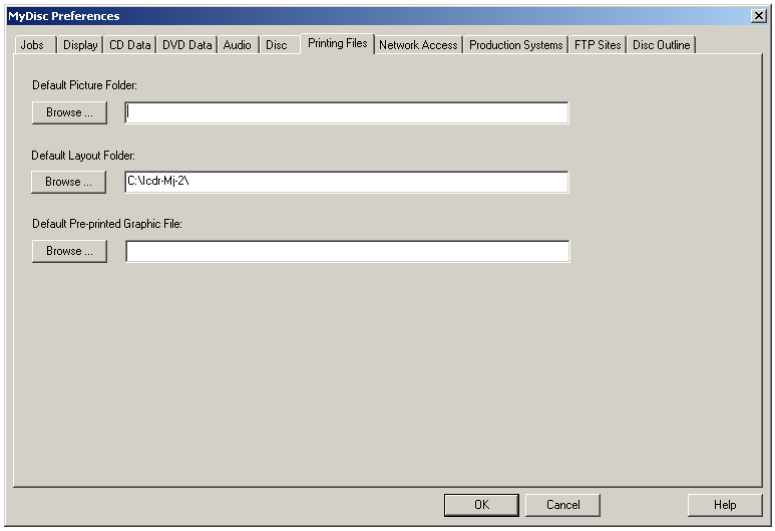
Disc Size	Data Capacity
63 minutes	550 Mb
74 minutes	650 Mb
80 minutes	700 Mb

Size of DVD

Selects the data capacity of any DVD discs created. The two choices of standard DVD-R media (3.95 and 4.7 gigabytes) are given in decimal billions of bytes (1,000,000,000 bytes), not the "power-of-two" gigabytes (1,073,741,824 bytes).

Printing Files Tab

This tab tells ***MyDisc*** where to look for certain files used when designing printing layouts and for printing discs. It allows default file folders to be specified where ***MyDisc*** can expect to find these files. (Files may be selected from other folders: this sets up the place where ***MyDisc*** will look first when another folder is not specified.)



The three types of files default locations may be specified for are:

1. **Default picture folder**
   Specifies the default folder for picture files (graphic images which can be included in a printing layout).

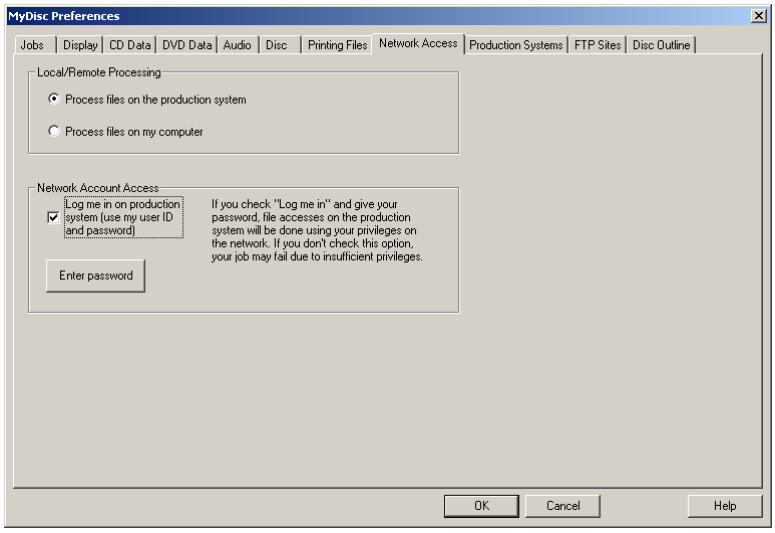
2. **Default layout folder**
   Specifies the default folder when opening disc printing layouts.

3. **Default pre-printed graphic file**
   For a disc that has been "trained" on when the ***ImageAligner*** option is used to print pre-printed (i.e., silk-screened) discs, this tab specifies the default pre-printed graphic file.

The default entry for each of these items goes in the field to the right. The **Browse** button next to each item may be used to open a file selection dialog to select the folder or file.

Network Access Tab

The settings in this tab control how files on the network are accessed when using ***MyDisc***.


MyDisc Preferences
Jobs
Display
CD Data
DVD Data
Audio
Disc
Printing Files
Network Access
Production Systems
FTP Sites
Disc Outline
Local/Remote Processing
Process files on the production system
Process files on my computer
Network Account Access
Log me in on production system (use my user ID and password)
If you check "Log me in" and give your password, file accesses on the production system will be done using your privileges on the network. If you don't check this option, your job may fail due to insufficient privileges.
Enter password
OK
Cancel
Help

Local/Remote Processing

Controls where the file processing necessary to create your disc will be done. The two choices are:

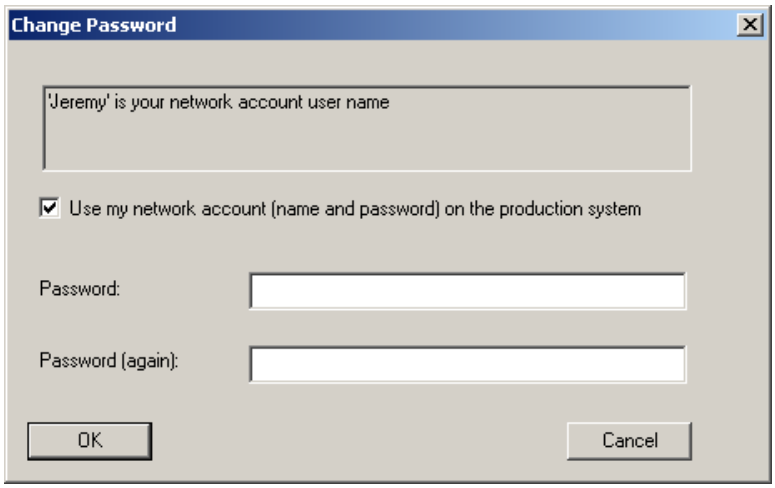
- Process files on the production system
- Process files on my computer

Which choice should be used? Processing should be done on the production system. The only reason not to do this is to keep your network password for the remote production system from being used. In this case however, jobs may fail due to insufficient network access privileges (see the option below for details).

Log me in on production system

If this option is checked, your network access password and privileges will be used when reading your source files. This allows you to access all the files you have sufficient privileges for. If this item is disabled (left unchecked), your jobs may fail because of insufficient privileges (by the production system itself) to access certain files on the network.

If this item is checked, you must also give your password to ***MyDisc***. Click the **Enter password** button. The following password entry dialog will open.

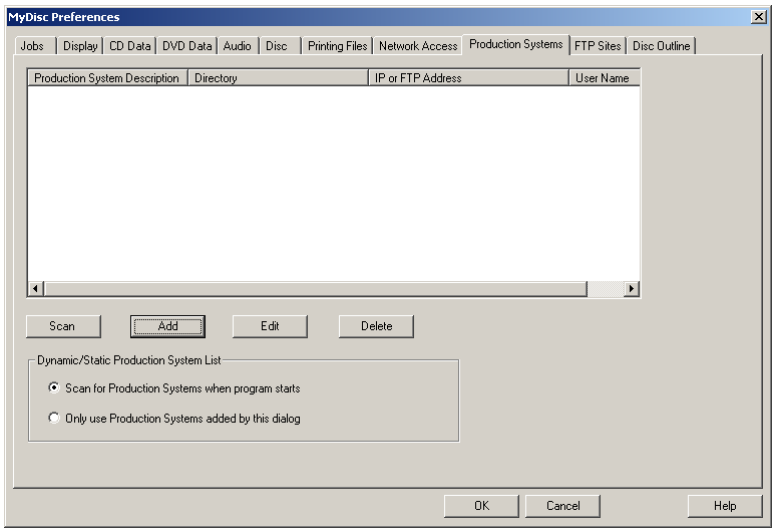


Note: When this item is used the password is encrypted, so it will not be visible to others.

Enter your password twice (for confirmation), click **OK** to give this information to ***MyDisc***.

Production Systems Tab

This tab is where the list of available disc production systems used by ***MyDisc*** is maintained. Production system entries can be added, edited and deleted here. (When discs are created, choose icons from this list of systems in the **Make Disc** tab).



The large window shows the static list of production systems (this may be blank). New entries may be added to the list or, existing entries may be edited or deleted by clicking the appropriate buttons below the list window.

Production Systems Handling Methods

Note: Even if the "dynamic" setting is chosen, production systems may be added to the static list (shown in the Production Systems tab). Any systems in the static list will be added to the list of systems found by scanning when the program starts.

There are two ways by which ***MyDisc*** handles production systems; located under the heading **Dynamic/Static Production System List.**

Scan for Production Systems when Program Starts

Under this setting, ***MyDisc*** will "scan" for any production systems it can find over the network each time the program is started. The systems that are found will be put in the list chosen (in the **Make Disc** tab) when making discs.

If this setting is used, the list of production systems displayed in this tab (in Preferences) will be blank, unless any production systems have been manually added (using other setting described below). Systems may be added manually.

Only use Production Systems Added by this Dialog

Under this setting, ***MyDisc*** maintains a static list of production systems. Manually select which systems are to appear in this list using the controls in this tab. No automatic scanning for production systems is done.

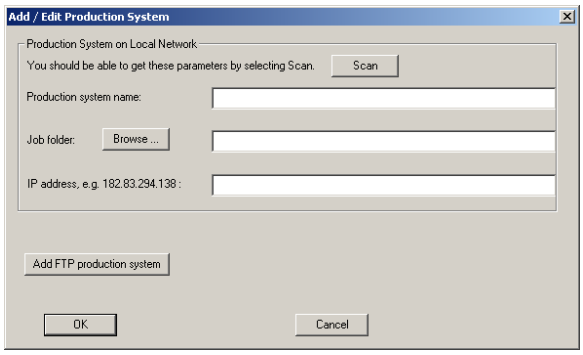
When this setting is used, the list of available production systems will appear in this tab. These are also the systems that may be chosen from to make a disc (in the **Make Disc** tab).

In most cases, there is little difference between the settings. If working in a place where it is possible for disc production systems to come and go, to be moved around or taken on and off line, the first (dynamic) setting above may be preferable. This will ensure that when ***MyDisc*** is used, the program will automatically find whatever systems are available. If the same set of production systems are always available, the second (static) setting may be used to ensure that the same list of systems will always be displayed.

Adding Production Systems

Production systems may be added to the list displayed in the **Production Systems** tab. This is the "static" list of available systems from which to choose when making a disc (in the **Make Disc** tab). The list can also be maintained by editing existing entries and deleting unwanted systems. The following section explains the manual addition of a production system to the list. It also explains how to add a remote production system that will be accessed via FTP (File Transfer Protocol), either over the local network or over the Internet.

To add a new system, click Add. The following dialog will open…



The first two fields are required for all production systems.

Production System Name

Can be any text describing the production system within the ***MyDisc*** program. The name of the production system (the commonly-used name in the organization or business) is put here.

Note: that this is different from using FTP sites as sources of files for discs. See page 61 for information on this use of FTP.

Job Folder

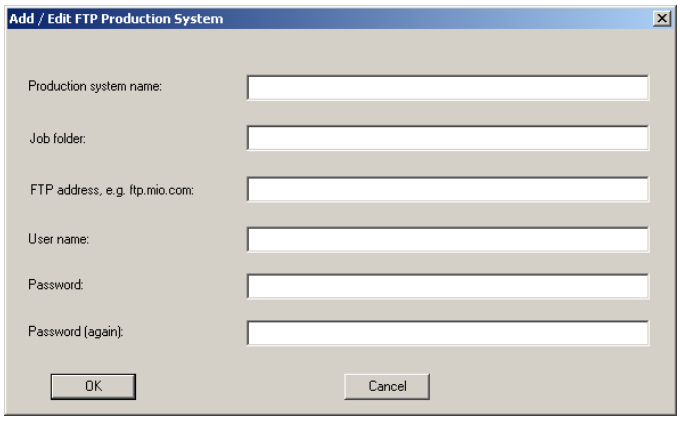
Identifies the file folder where job files for the production system will be written. The name of this folder from your system or network administrator is required. Either type in the complete path (like **\\BURNER1\Jobs** in the example above), or use the **Browse** button to open a file selection dialog to locate the job folder.

Internet Protocol (IP) address

The IP address of the production system. IP addresses consist of four numbers separated by periods (like **204.233.87.6**). This number may be entered by hand or ***MyDisc*** will automatically scan for available production systems by clicking the **Scan** button.

Adding File Transfer Protocol (FTP) Production Systems

This dialog may be used to add a production system that will be accessed via FTP either over the local network or over the Internet. Click the **Add FTP production system** button. The following dialog will open:



Fill in the following fields, then click **OK** to add the production system.

Production System Name

The name of the system as it will appear in the list of available systems. It can be any name you choose.

Job Folder

Give the name of the folder on the network at the location jobs will be submitted. This folder must be set up on the production system end as well; check with the network or system administrator if unsure of the correct location.

FTP Address

The FTP address used to access the remote production system. FTP addresses are given in the form **ftp.*site domain name*;** for example

ftp.bigcompany.com

User Name

The user name used to log in to the FTP site.

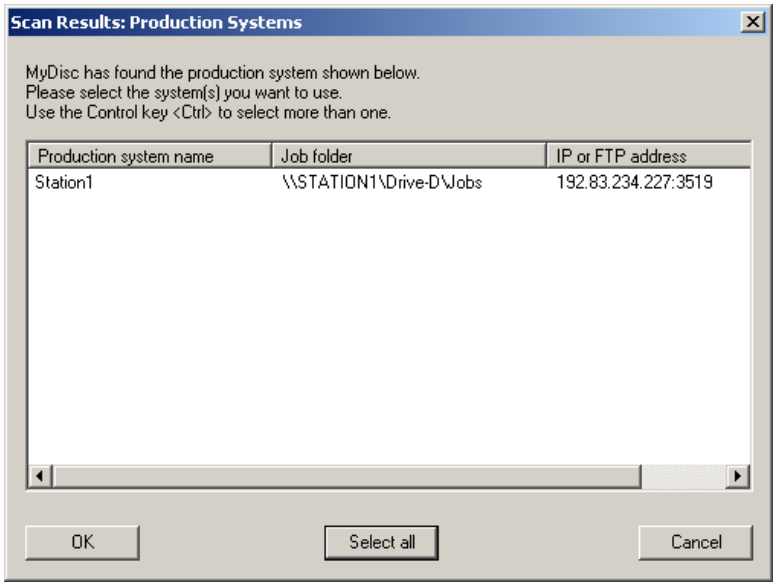
Password

The password needed to log in to the production system via FTP. There are two fields to confirm that the password is correct. Type the same password into both of them. (If the production system does not require a password, leave both of these fields blank.)

“Scanning” for Production Systems

MyDisc uses a process called *network discovery* to search for disc production systems over the network your computer is connected to. (This same process is also used to transmit status information about production systems and disc-making jobs to your computer.)

If the “dynamic” method of handling production systems (described above) is chosen, ***MyDisc*** will scan for production systems each time the program is started. A scan in the **Production Systems** tab may be initiated when you’re adding or editing production systems. Click the **Scan** button the computer will scan the network, and the following dialog will appear.

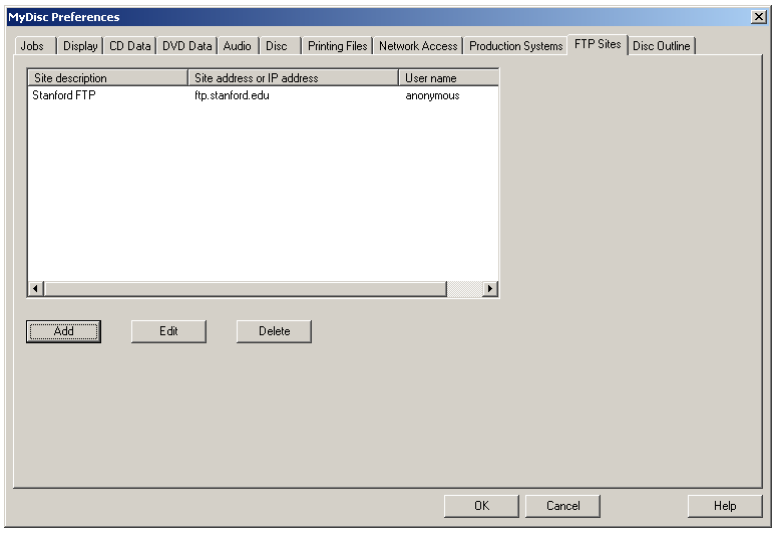


Select any of the systems, which were found to add to the static list of available systems. Use the **Select all** button to select all the systems shown here and add them to the list.

File Transfer Protocol (FTP) Sites Tab

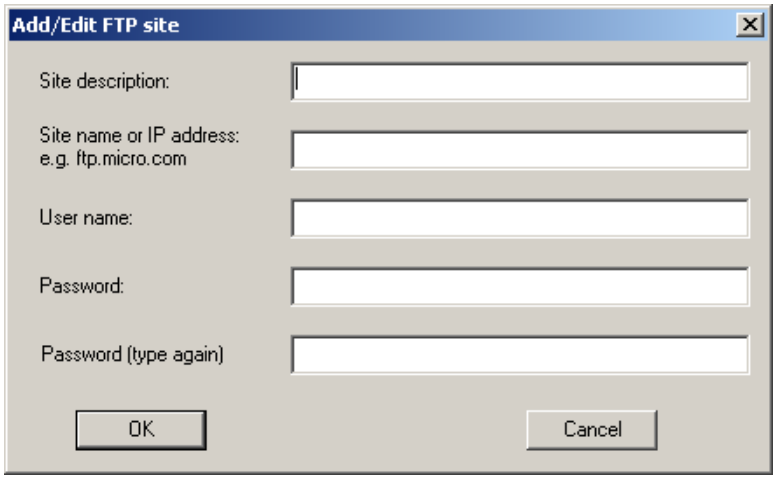
Note that this is different from accessing remote production systems via FTP. See page 59 for information on this use of FTP.

This tab is where a list of FTP sites is maintained. These may be used as sources of data files. A list of FTP sites may be built here. Any of those sites may be selected as a data source when selecting files for a disc. (Any FTP sites in this list will appear in the "tree" of available volumes, shown in the upper-left hand pane in the **Select Files** tab.)



MyDisc can only use FTP sites as sources for data files, not for audio tracks for audio discs

The buttons below the list window are used to add, edit or delete entries in the list. When adding a new entry or editing an existing one, the following dialog appears:



Fill in the fields, and click **OK** to add the new or updated entry to the list.

Site Description

The human-readable name that identifies the site, which will appear in the list of sites chosen from when selecting files. It can be any text chosen.

Site Name or IP Address

The actual name of the FTP site can either be a standard FTP address (e.g. **ft.microsoft.com**), or an IP address (e.g. **204.233.87.6**).

User Name

The user name used to log in to the FTP site.

Password

The password needed to log in to the FTP site. There are two fields to ensure your password is correct: type the password into both of them.

Disc Outline Tab

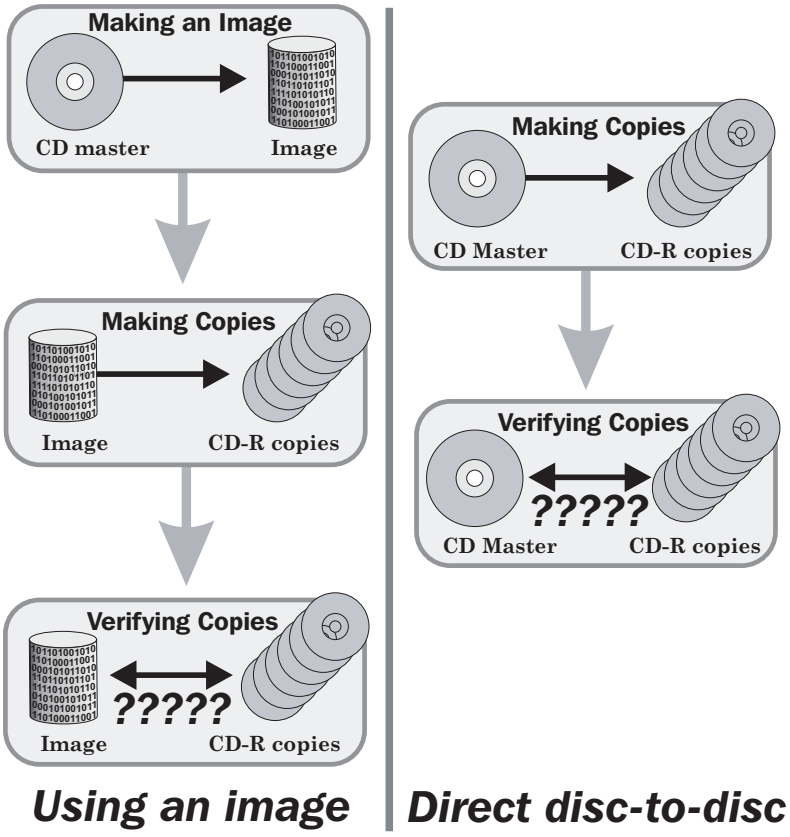
Contains options for handling non-standard physical disc sizes and shapes. Since Microtech production systems only handle standard discs, this tab is not used.

ImageMaker EZ
Disc Duplication

Basic Principles

A disc image can also be created by an application (such as ***MyDisc***) from any collection of files selected by the user to create a custom disc. Such discs can contain computer data, audio (sound) data, or both.

One of **Microtech's Systems** tasks is to make copies of discs, using writable (or recordable) discs (**CD-R** and **DVD-R**). Each of these copies is the duplicate of a master disc. The discs being copied may contain any kind of data, which can be stored on computer media. **Microtech's Systems** ensure that all of the data from the master is transferred accurately to each disc



What is a Disc Image?

In the following instructions the term "disc image" (or just "image") will be used. This is a fundamental part of making copies with a Microtech production system.

A **disc image** is a file, which resides on the systems hard drive (or elsewhere). This file contains all of the data contained in a disc, plus additional information needed to make exact copies of the original disc.

A disc image is created by selecting the "make image" operation in ***ImageMaker* EZ**. After creating the image, as many disc copies as needed can be made. When making copies from a disc image the original disc is not needed anymore.

Using an Image vs. Direct Disc-to-Disc Copying

There are two ways to make copies of discs on a Microtech production system:

When copying directly disc-to-disc, the **Microtech System** actually makes a **temporary** copy of the master disc on its hard drive before making the disc copies. This makes the data transfer more reliable.

Copying directly disc-to-disc–the simplest way to make copies.
After loading the master disc in the disc reader, copies can be made directly from the disc.

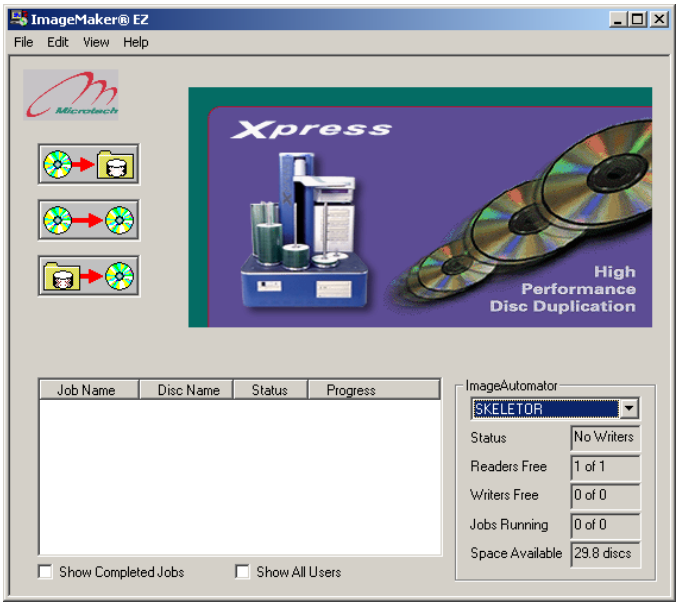
Making an image of the master disc, then making copies from the image.
Two steps are required in making copies this way. In the first step, the master disc is read and all its data copied to an image file on the Microtech production system's hard drive. In the second step, disc copies can be made from that image.

When should you make an image instead of copying directly disc-to-disc?

- When regularly making copies of the same master disc.
- When the master disc is available for a limited time and copies will be made from it later.

Using *ImageMaker* EZ to Make Disc Copies

The ***ImageMaker* EZ** program is the tool used for all disc duplication tasks on a Microtech production system: making disc copies, mastering original discs, and printing discs. Everything needed is inside this program, which starts automatically when the production system is turned on. Its main window is shown below.



The general sequence follows:

Select the Operation

Click one of the three operation buttons to make a choice:

	Make a disc image from a master disc	Page 41
	Make disc copies directly from a master disc	Page 44
	Make disc copies from a disc image	Page 45

Fill out the necessary information to start the job

After selecting the operation, a panel of choices will appear with places to fill in the needed information for the operation.

Select a printing layout to print the disc copies

If a printer is installed on the production system, disc copies may be printed. Either select an existing print layout or design a new one using the Layout Editor. (A number of options and details are discussed in a separate chapter *Disc Layout*.)

Make sure there are enough blank discs loaded for your job

Load the input spindle(s) with enough discs to finish the job. (More discs may be added later if needed.)

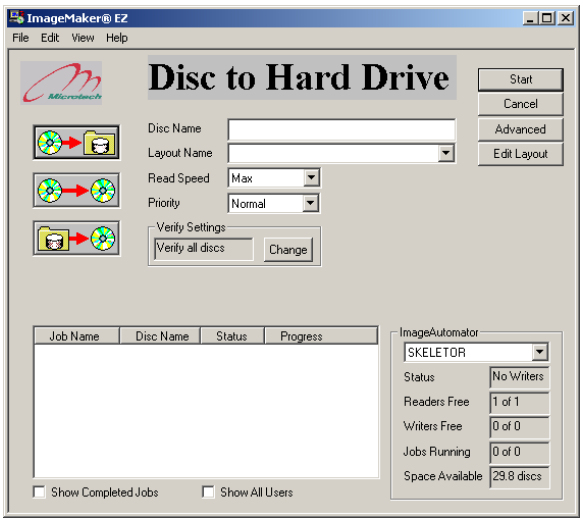
Click the Start button to start the selected operation

This initiates processing on a Microtech production system. While disc production is underway the progress of the job can be monitored with the on-screen status display.

Pick up finished discs

The finished discs will be stacked in the output spindle(s). If a printer is installed and is printing discs, they will be readily identified by their labels.

Making Disc Images (Disc to Hard Drive)



When making an image from a master disc, load only the original disc to be read into a disc reader drive.

To make an image of a master disc, select the image-making operation by clicking the **operation button**, shown on the left. The window will change, and the information fields for this operation will appear as shown below. Fill in the fields described here, then click **Start** to begin the image-making operation.

The Disc Name *field identifies the disc you're making an image from:*

Type a name identifying the disc into the field marked **Disc Name**. When making copies from this disc later, this name will appear in the list of available images. It can use any characters that are allowed in Windows file names (the following characters can not be used: **/\<>|*?":**). This name must not be the name of an existing image.

The Layout Name *field selects a print layout to link to this disc:*

An existing print layout to link to this disc image may be selected, a new layout may be created, or this field may be left blank. (See page 53 for details on printing.) To create a new layout or edit an existing layout, click the **Edit Layout** button.

When the needed fields are filled in, click the **Start** button. If a new layout has been created or an existing layout ha been modified or edited (as in the step above) **the layout must be saved in order to proceed with this operation:** if the save is cancelled this dialog will remain on screen and the operation will not be started.

Insert the master disc into the Microtech production system disc reader drive when instructed to

When the system is ready, a window will pop-up as notification to load the master disc. (On systems that have more than one disc reader drive installed, the drive to use will be declared.) The window will mention the disc by name, ensuring that the correct disc is loaded.

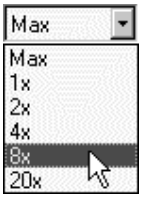
The disc reader drive will automatically open. *Click* ***Start*** *before inserting the disc.* When the disc is loaded, the image making job will begin. The master disc will be read, and all its data transferred to an image on a Microtech production system's hard disk.

Remove the master disc when the image has been made

After the image has been made, the reader drive will automatically open. Remove the disc from the drive.

Additional Options for Making Images

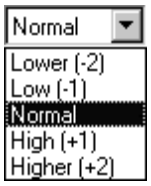
Additional options are available when making an image from a master disc. These options are accessed by clicking the **Show Advanced** button. The options appear below the other fields on screen (new window is shown below.) To hide this options list after already opening, click the **Hide Advanced** button.



Read Speed

Select speed of the disc reader drive when reading the master disc. If unsure of the speed to use, set this control to **Max** to use the maximum drive speed. The drive may be set to a specific speed, slower than the maximum which may be useful if having problems reading discs at maximum speed.

To select the drive speed, click on the arrow to the right of this control. This will open a drop-down list: choose the desired speed by clicking on it. To close the list with no change, click anywhere outside the control.



Priority

Sets the priority level for the job about to be submitted. The priority determines how soon the job will run when it competes with other jobs in the system. Higher priority jobs run before lower priority jobs. There are five possible settings here, from **Lower** to **Higher**.

Verify

Allows the choice of verifying the image made from the master disc after it is created. While verification does take some additional time (the master disc must be read a second time after creating the image), it insures that the image was made accurately, and is therefore a recommended option.

If image verification after creation is desired, check ☑ this option. Otherwise, leave it unchecked.

Email when Done

Selects whether an email message will be sent by the system when this operation (reading a disc to a hard drive image) is complete. The message will be sent to the email address specified in ***ImageMaker* EZ**'s **Preferences** settings. (See page 55 for more information on these settings.)

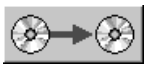
If email notification after the disc is read is desired, check ☑ this option. Otherwise, leave it unchecked.

Email on Error

This allows the choice of an email message to be sent by the system in the event of an error during this operation (reading a disc to a hard drive image).

If email notification if an error occurs is desired, check ☑ this option. Otherwise, leave it unchecked.

Making Disc Copies Directly From a Master Disc



When copying directly disc-to-disc, the **Microtech System** actually makes a **temporary** copy of the master disc on its hard drive before making the disc copies. This makes the data transfer more reliable.

To make copies directly from a disc, select the disc-to-disc copy operation by clicking the **operation button**, shown on the left. The window will change, and the information fields for this will be displayed, click **Start** to start the copy operation.

Use the* Disc Name *field to identify the master disc to be copied.

Type a name identifying the disc into this field. This name is used for tracking purposes only; it will appear in the list of active jobs displayed.

Use the* Layout *field to select a print layout to use when making the copies.

To print the disc copies, select the layout to be used in the field labeled **Layout**. For a list of available layouts click the arrow to the right of this field, a drop-down list is opened; select the layout by clicking on it.

If not printing on the discs, leave this field blank.

To create a new layout or edit an existing layout click the **Edit Layout** button. (See page 73 for more information on creating and using print layouts.)

Use the* Quantity *field to set the number of disc copies to make.

Use the control labeled **Quantity** to select the number of copies to be made. Type the number directly in the field or use the small up and down arrows to adjust the quantity.

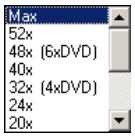
When the necessary fields have been filled out, click the **Start** button to begin the copy operation. When the system is ready, a pop-up

window gives notice to load the master disc into the disc reader drive. (On systems that have more than one disc reader drive installed, it will state which drive to use.) Insert the master disc in the Microtech production system. The window will mention the disc by name, make sure the correct disc is loaded. Once the disc is loaded, the copy operation will begin. The master disc will be read, and all its data transferred to blank discs to make the requested number of copies.

Additional Options for Making Copies Directly from Master Discs

Additional options are available when making copies directly from a master disc. These options are accessed by clicking the **Show Advanced** button. The options appear below the other fields on screen (new window is shown below.) To hide this option list after opening, click the **Hide Advanced** button.

Read Speed



Selects the speed of the disc reader drive when reading the master disc. If unsure of the speed to use, set this control to **Max** to use the maximum drive speed. The drive may be set to a specific speed, slower than the maximum which may be useful if having problems reading discs at maximum speed.

To select the drive speed, click on the arrow to the right of this control. This will open a drop-down list: choose the desired speed by clicking on it. To close the list with no changes click anywhere outside the control.

Write Speed

Selects the speed the disc writer drive(s) use to write disc copies. If unsure of the speed to use, set this control to **Max** to use the maximum drive speed. The drive can also be set to a specific speed, slower than the maximum which may be useful if having problems writing discs at maximum speed.

To select the drive speed, click on the arrow to the right of this control. A drop-down list of selections will open: choose the speed desired by clicking on it. Click anywhere outside of this control list to close it with no changes to the drive speed.

Priority

Sets the priority level for the job about to be submitted. The priority determines how soon the job will run when it competes with other jobs in the system. Higher priority jobs run before lower priority jobs. There are five possible settings here, from **Lower** to **Higher**.

Verify

Allows the choice of verifying the image made from the master disc after it is created. While verification does take some additional time (the master disc must be read a second time after creating the image), it insures that the image was made accurately, and is therefore a recommended option.

If image verification after creation is desired, check ☑ this option. Otherwise, leave it unchecked.

Email When Done

Selects whether an email message will be sent by the system when this operation (copying a disc) is complete. The message will be sent to the email address specified in ***ImageMaker* EZ**'s **Preferences** settings. (See page 55 for more information on these settings.)

For email notification after copies are made, check ☑ this option. Otherwise, leave it unchecked.

Test Write

This option allows a *test write* of the disc before actually committing to making disc copies. A test write checks to ensure that data flows correctly to the disc writer drive(s) being used to make the copies, without actually "burning" the discs in those drives. This option is recommended in cases when using a new or different blank disc media.

Be aware that if you have selected a printing layout for the disc, the disc copy will still be printed even if you choose to test-write them. To disable printing when making disc copies, select [new layout] in the layout selector box before you start the operation.

To test write instead of actually making copies, check ☑ this option. Otherwise, leave it unchecked.

Email On Error

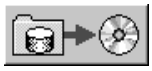
This allows the choice of an email message to be sent by the system in the event of an error during this operation (reading a disc to a hard drive image).

If email notification if an error occurs is desired, check ☑ this option. Otherwise, leave it unchecked.

Copy Protect

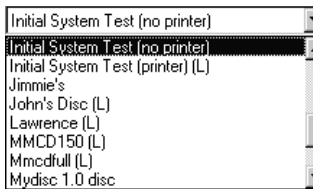
If copy protection on the disc production has been set up, this item may be checked to enable copy protect for the discs about to be made.

Making Disc Copies From an Image (Hard Drive to Disc)



To make copies from an existing disc image, select the image-to-disc copy operation by clicking the operation button shown here. The information fields for this operation will appear as shown below. Fill out the fields, then click **Start** to start the copy operation.

Use the Disc Name *field to select the disc image desired to make copies of.*



This field shows the name of the image that will be copied to disc. Click ▼ to the right of this field to open a list of available images. Click on the name to select it. (If there are more images than will fit in the box, use the scroll buttons to move up and down in the list.) Notice that images which have a layout linked to them have **(L)** after their name in the list.

Use the Layout Name *field to select the printing layout to use when printing discs.*

If a layout is already linked to the disc image selected, [linked layout] will be displayed in the **Layout Name** field. To use the linked layout do nothing.

Other choices are:

1. Select another layout by clicking and selecting a layout from the list
2. **Create a new layout** by clicking **Edit Layout** and moving to the Layout Editor;
3. **Print nothing on the discs** by selecting **New layout** from the list of layouts.

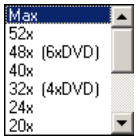
Use the* Quantity *field to select the number of discs you want to make.

Type the number directly into this field, or use the small up and down arrows to increase or decrease the number.

When the fields have been filled in, click the **Start** button to start the copy operation. The data in the image will be copied to one or more blank discs in the production system's writers.

Additional Options for Making Disc Copies From an Image

There are some additional options available when making disc copies from an image. These options can be accessed by clicking the **Show Advanced** button on screen, which makes the options appear below the other fields. (The new window is shown below.) To hide this options list after opening, click the **Hide Advanced** button.



Write Speed

Selects the speed the disc writer drive(s) use to write disc copies. If unsure of the speed to use, set this control to **Max** to use the maximum drive speed. The drive can also be set to a specific speed, slower than the maximum which may be useful if having problems writing discs at maximum speed.

To select the drive speed, click on the arrow to the right of this control. A drop-down list of selections will open: choose the speed desired by clicking on it. Click anywhere outside of this control list to close it with no changes to the drive speed.

Priority

Sets the priority level for the job about to be submitted. The priority determines how soon the job will run when it competes with other jobs in the system. Higher priority jobs run before lower priority jobs. There are five possible settings here, from **Lower** to **Higher**.

Verify

Allows the choice of verifying the image made from the master disc after it is created. While verification does take some additional time (the master disc must be read a second time after creating the image), it insures that the image was made accurately, and is therefore a recommended option.
If image verification after creation is desired, check ☑ this option. Otherwise, leave it unchecked.

Email When Done

Selects whether an email message will be sent by the system when this operation (copying a disc) is complete. The message will be sent to the email address specified in ***ImageMaker* EZ**'s **Preferences** settings. (See page 55 for more information on these settings.)

For email notification after copies are made, check ☑ this option. Otherwise, leave it unchecked.

Test Write

This option allows a *test write* of the disc before actually committing to making disc copies. A test write checks to ensure that data flows correctly to the disc writer drive(s) being used to make the copies, without actually "burning" the discs in those drives. This option is recommended in cases when using a new or different blank disc media.

To test write instead of actually making copies, check ☑ this option. Otherwise, leave it unchecked.

Be aware that if the master you're making copies from includes a printing layout, the disc(s) will still be printed even if you choose to test-write the disc(s). To disable printing when making disc copies, select [new layout] in the layout selector box before you start the operation.

Email On Error

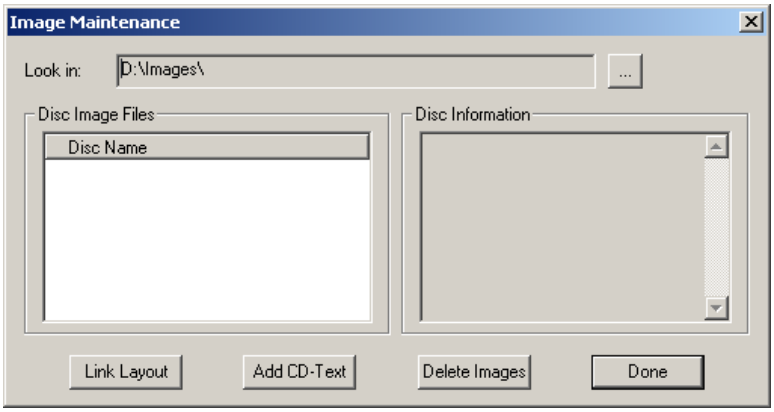
This allows the choice of an email message to be sent by the system in the event of an error during this operation (reading a disc to a hard drive image).

If email notification if an error occurs is desired, check ☑ this option. Otherwise, leave it unchecked.

Managing Disc Images

This section covers the management functions on the Microtech production system that take care of the disc images stored on the system's hard drive. These functions include removing images no longer needed, linking printing layouts to images, and adding CD text to images.

All of these maintenance functions are reached by selecting **Maintenance→Disc Images...** from ***ImageMaker* EZ**'s **Edit** menu. The maintenance dialog is shown below.



To use this dialog, select the image (or multiple images) to work with and click the appropriate operation button. When finished with this dialog, click **Done** to exit.

Deleting Images

Unnecessary images can be deleted. Unused images should be deleted to conserve hard disk space. (The amount of hard disc space available, in number of full discs, is given in the status information area on the ***ImageMaker* EZ** window.)

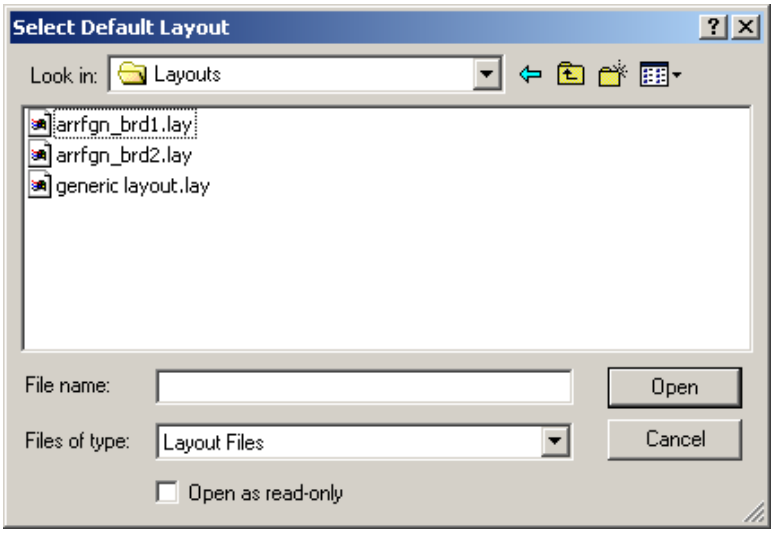
One or more images can be selected in the left-hand window of the **Maintenance** dialog, using standard Windows multiple file-selection techniques (use the **Control** key to make multiple selections or the **Shift** key for a range selection). To look in a different folder or drive, click the ... button at the top (to the right of the **Look in** field).

When the images to be deleted are selected, click the **Delete Images** button to remove the images.

Linking Printing Layouts to Images

This function allows a printing layout to be linked to a disc image after the image has been created. (A printing layout can also be linked to an image at the time the image is created on the hard drive, as described on page 51.)

Select the image to link a layout to, using the left-hand window as described above under the heading **Deleting Images**. When the image has been selected, click the **Link Layout** button. This will open a file selection dialog, shown below.



The dialog will only show *ImageMaker* printing layout (**.lay**) files. Use this dialog to locate the printing layout to link to the disc image. Click **Open** to link the layout to the image.

Note: This function can be used to link printing layouts to disc images that were created outside of ***ImageMaker* EZ**.
The requirements for this are:

1. The image file must be a standard "raw" disc data file, with an .img filename extension.
2. The image file must consist of single-track data only; multiple tracks are not allowed.

If a printing layout is linked to such an externally-created image file, an *ImageMaker* image file (with a **.mmd** extension) will be created. The original **.img** file will be renamed to the same name with a **.dat** extension.

Adding CD Text to Images

Not all disc writers support CD-Text. Before you use this feature, check with your Microtech sales representative or customer service to make sure that your system supports this format.

***ImageMaker* EZ** allows special annotation text to be added to the disc copies. **CD text** can be created by any of several third-party software packages; this text gives additional information about each track on the disc, including the name of the artist, the title of the piece, and more. This text is in an industry-standard format known as **CD-Text**. (It is a "binary" file format, not a text format, so it can not be created with any type of text editor.) To use this feature, create a file in the CD-Text format containing the text. ***ImageMaker* EZ** then reads this file and adds the information to the disc in the correct format.

The **Image Maintenance** dialog allows CD-Text information to be added to a disc image. Once this is done, all copies made from that disc image will have the CD-Text information included.

To add CD-Text information to a disc image, select the disc image in the **Image Maintenance** dialog. Click the **Add CD-Text** button; to open a file-selection dialog.

Select the file containing the CD-Text information, then click **Open** to add this information to the image file.

The default file "extension" in this dialog is **.bin** ("files of type" is set to "CD-Text files"). To find files with a different extension, type an asterisk and a period followed by the extension in the **File name** field. For instance, if the files have an extension of **.dat**, type

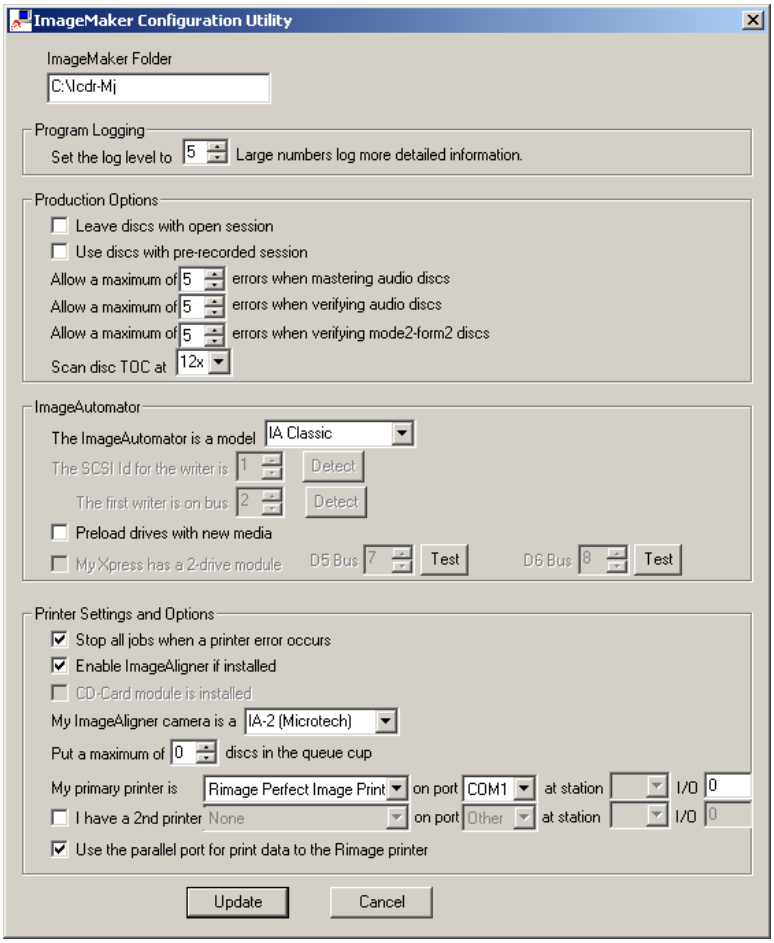
***.dat**

into the **File name** field.

Advanced System Configuration

This section explains all of the configuration items that can be set. These items tell the system about the hardware that is installed, and also control certain basic functions of the production system. (See page 55 for configuration options which pertain to the disc production software, ***ImageMaker EZ***.)

To open the configuration utility, click the Windows **Start** button, located on the lower-left corner of the desktop. From the menu that pops up, work through the submenus to select **Programs→ImageMaker→Configure ImageMaker**. The configuration dialog, shown below, will open.


ImageMaker Configuration Utility
ImageMaker Folder
C:\Icdr-Mj
Program Logging
Set the log level to 5 Large numbers log more detailed information.
Production Options
Leave discs with open session
Use discs with pre-recorded session
Allow a maximum of 5 errors when mastering audio discs
Allow a maximum of 5 errors when verifying audio discs
Allow a maximum of 5 errors when verifying mode2-form2 discs
Scan disc TOC at 12x
ImageAutomator
The ImageAutomator is a model IA Classic
The SCSI Id for the writer is 1 Detect
The first writer is on bus 2 Detect
Preload drives with new media
My Xpress has a 2-drive module D5 Bus 7 Test D6 Bus 8 Test
Printer Settings and Options
Stop all jobs when a printer error occurs
Enable ImageAligner if installed
CD-Card module is installed
My ImageAligner camera is a IA-2 (Microtech)
Put a maximum of 0 discs in the queue cup
My primary printer is Rimage Perfect Image Print on port COM1 at station I/O 0
I have a 2nd printer None on port Other at station I/O 0
Use the parallel port for print data to the Rimage printer
Update
Cancel

Several of these configuration items have already been discussed. The remaining items are explained below.

Hardware Configuration

Leave this item **unchecked**.

Program Logging

Leave this item at its default setting (5). Note: changing this setting is only necessary when diagnosing system problems with the help of Microtech Customer Support.

Production Options

When mastering split tracks into separate files

Leave this item unchecked unless there is a reason for copying each audio track into a separate file.

Leave discs with open session

The last session written on the disc must be closed for the disc to be read. By leaving the session open, more sessions can be written to the disc later. If copying multi-session discs, check this item.

Allow a maximum of <X> errors when mastering …

This item controls the maximum number of read errors allowable when mastering audio discs (copying discs to hard drive). The default setting of this item is **5**. The number can be increased to allow problematic audio discs to be copied.

Printer Settings and Options

Stop all jobs when a printer error occurs

Check to enable this item.

Enable ImageAligner if installed

This item must be checked to use ***ImageAligner***. The item may be unchecked to disable the installed ***ImageAligner***.

Identifying your printer

Select the printer to be used in the field labeled **My disc printer is called**, and set the port in the following field accordingly. (If there is no printer, disregard this item

IF YOUR PRINTER IS A	SELECT THIS TYPE	ON THIS PORT
Perfect Image (black-only or color thermal transfer)	Rimage Printer	COM1
Signature (color inkjet)	CD Color Printer III	LPT1

Identifying your Microtech production system

In the field labeled the System

Preload drives with new media

This option controls whether disc writer drives will be preloaded or not. With preloading after a drive has finished making a disc, it will automatically be loaded with a blank disc—whether or not another disc is to be made on that drive. This saves processing time. If this option is *not* set, drives will only be loaded with blank discs as needed.

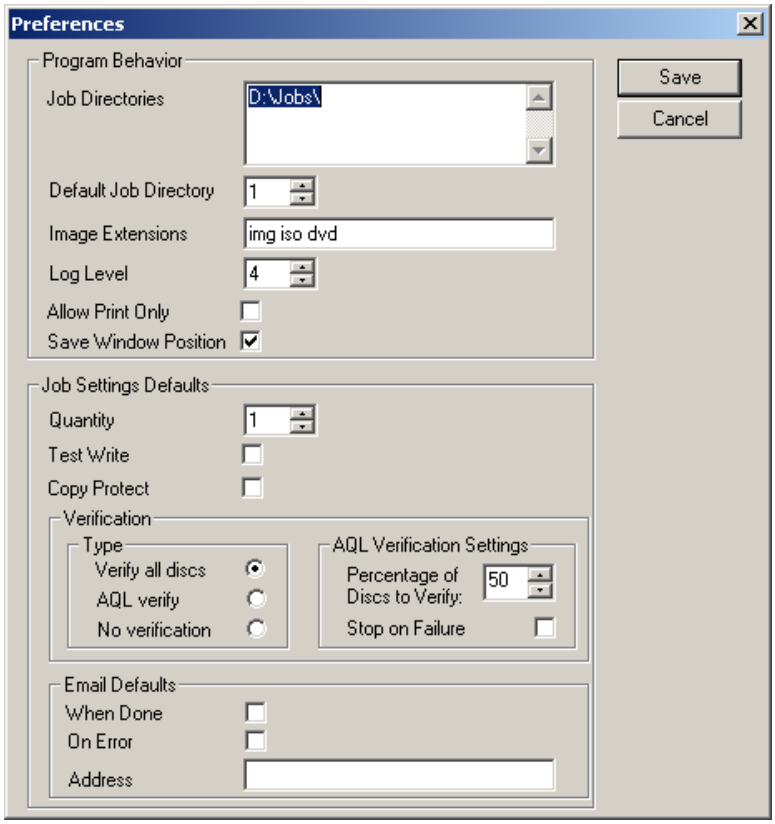
Note: If any configuration items are changed, UPDATE must be checked before the utility is closed.

Caution: If the preload drives option is set, disc writer drives will have blank media in them when the system is shut down and when it is later restarted. If a different type of blank media is used in the next operation, the previous type of media will still be loaded in the writer drives.

ImageMaker EZ Preferences: Details

The **Preferences** dialog in the ***ImageMaker EZ*** disc production program contains several configuration items that control certain aspects of system behavior. These items are explained in detail here.

To open this dialog, select **Preferences** from the **Edit** menu in ***ImageMaker EZ***. The dialog shown below will open.



Items in this dialog are as follows:

Notes

This field is for annotation purposes only. Any text can be entered into this is field to document any changes made to these preferences, or any other necessary notes.

Log File Name

This gives the complete filename (including drive and folder components) of the file used to log the Microtech production system's activity and errors. The default filename is:

C:\Icdr-MJ\Logs\icdr-ez.log

This filename must not be changed unless you are requested to do so by Microtech technical support.

Note: To add a production system to the list but the name of its job folder is not known, ask the system or network administrator for assistance.

Job Directories

This item contains one entry for each **Microtech** production system in the list on the main ***ImageMaker* EZ** screen. (See page **Error! Bookmark not defined.**.) Each entry is the full pathname of the **job folder** on the production system; the job folder is where job requests are written when submitting production jobs. For example:

\\main\ImageMaker\jobs

See page 58 **Specifying Disc Production Systems in Preferences** for more information on setting this item.

Default Job Directory

Specifies which of the entries in the item above (**Job Directories**), if any, will be used as the default job directory. This item is given as a number corresponding to the position of the job directory in the list: **1** for the first item, **2** for the second item, etc.

To specify no default production system to use, enter **0** (zero). This will force ***ImageMaker* EZ** to do a search for an active production system each time the software is started. (See page 58), **Specifying Disc Production Systems in Preferences** for more information on setting this item.

CDRemote.Exe

Gives the name and location of the ***CD-Remote*** executable program file. For systems that run ***CD-Remote*** locally, the default location of this program is

C:\Icdr-MJ\CDRemote.Exe

DiscPrnt.Exe

This gives the name and location of the executable program file for the disc layout editor. The default for this (which should not be changed) is

C:\Icdr-MJ\DiscPrnt.Exe

Log Level

Sets the level (the amount and type of information) for logging of system activity and errors on the Microtech production system. The default setting is **4**. Higher numbers mean more information gets logged. Higher logging levels can also significantly slow down system response time.

Quantity Default

Sets the default number for quantity (number of discs to make) for all disc-making operations in ***ImageMaker EZ***. This default is what will appear in the **Quantity** field when a disc-making operation is selected by the user. (The default is set at **1**.)

Normal Priority

Sets the default priority for all ***ImageMaker EZ*** operations when the "normal" priority (in the "advanced" display) is selected. The default for this setting is 5.

Verify Default

Sets the default setting for the verify option (the **Verify** checkmark item) for all ***ImageMaker EZ*** operations. If the default is checked here, the **Verify** checkmark (on the "advanced" display) will be checked whenever the user selects a new operation. (The default setting can always be overridden by the user when they submit their jobs.) The standard default is no verification (option unchecked).

Test Write Default

Sets the default setting for the test-write option (the **Test Write** checkmark item) for all ***ImageMaker EZ*** disc-making operations. If the default is checked here, the **Test Write** checkmark (on the "advanced" display) will be checked whenever the user selects a new operation. (The default setting can always be overridden by the user when submitting their jobs.) The standard default is no test writing (option unchecked).

Email When Done Default

If this item is checked, an email message will be sent to the email address given.

Email On Error Default

If this item is checked, an email message will be sent to the email address given.

Email Address

Gives the email address to be used for both notifications when jobs are done and notifications of errors during jobs. (If no email notification required, this item can be left blank.)

Save Window Position

Controls whether the position and size of the ***ImageMaker EZ*** window will be saved after the program is closed. Check this item to "remember" where and how big the window was.

Specifying Disc Production Systems in Preferences

This process creates the list of available production systems that appears on the main ***ImageMaker* EZ** screen, from which the user can select a system to be used.)

There are three related items in **Preferences** that work together to create the list of production systems:

1. **Job Directories**, contains the job folder for each production system;
2. **Default Job Directory**, specifies which production system (if any) will be the default;
3. **CDRemote.EXE**, points to the executable program file for the ***CD-Remote*** process.

The setting for the above items depends upon whether the ***ImageMaker* EZ** software will be used with a **local** or with a **remote** production system.

1. **Local usage** is using ***ImageMaker* EZ** directly on the production system itself;
2. **Remote usage** is working from a desktop with ***ImageMaker* EZ**, and a remote production system is selected (**Xpress** or ***ImageAutomator***) to process discs.

For Local Usage

To be able to run locally—that is, to do production on the Microtech production system itself—the local machine must be made the **first** entry in the list of systems (in the **Job Directories** item). The job folder for the production system will always be

D:\Jobs

This must be the first entry in the **Job Directories** item. Additional remote systems may be entered after this, and those remote systems may be selected for use from the main ***ImageMaker* EZ** screen.
For local usage, a valid path to the ***CD-Remote*** executable program file must be entered. For the Microtech production system, this will be

C:\Icdr-MJ\CD-Remote.EXE

Finally, set the **Default Job Directory** according to the preference for the default production system to use on program startup. Read the following section for more information.

For Remote Usage

If you intend to use ***ImageMaker* EZ** *only* with remote production systems, then enter the job folder for each remote system in the list under the **Job Directories** item as described above. Remote systems can be entered in any order. Set the **Default Job Directory** item also as described above.

If only remote production is used with ***ImageMaker* EZ**, the **CDRemote** item must be left blank. If local production is ever added, this item must be filled in when local production is initiated.

Selecting the Default Production System

The Default Job Directory item selects the default production system—that is, the system automatically selected each time you start ***ImageMaker EZ***.

This can be set two ways:

1. To select a specific system as the default, set this item to the number corresponding to the system's position in the list (1 = first, 2 = second, etc.).

   For example, if you want to select the second system in the list as the default, then enter **2** in the **Default Job Directory field**.

2. To make ***ImageMaker* EZ** search for the first available production system, enter **0** in the **Default Job Directory field**.

   You can use this feature to locate an available system in an environment when production systems may or may not be available. ***ImageMaker* EZ** will query each system in the list, and will use the first system that responds. (Both local and remote systems can be in the list.) The name of the selected machine will appear in the machine selection field on the main ***ImageMaker* EZ** screen.

Setting Up a Microtech Production System to use Adobe Acrobat Files

Discs can be printed on a Microtech production system using Adobe Acrobat (.PDF) files. Acrobat is one of the most common interchange file formats in use today, allowing users to share documents and visual data across computer platforms. (The procedure for printing from Acrobat files is given on page 71.)

If using Acrobat files to print discs, Adobe Acrobat Reader must be installed on your system, and the system must be correctly configured. Acrobat Reader, can be obtained for free by downloading it from Adobe's Web site (**www.adobe.com**). The exact URL is not provided here as it may change; Adobe's main page will have a link for the download page
Once the application is downloaded from Adobe, run it by double-clicking on the executable file in Windows Explorer to install it on your system. Install it in the default location, which is:

C:\Program Files\Adobe\Acrobat 4.0\Reader

Configuring *ImageMaker* to Use Adobe Acrobat Files

Once Acrobat is installed one small change to the ***ImageMaker* EZ** configuration file is necessary to make it find the Acrobat viewer software. In the **jobmgr.cfg** file, place the following statement:

AcrobatDir = C:\Program Files\Adobe\Acrobat 4.0\Reader

The file **jobmgr.cfg** is found in the folder **C:\ICDR-MJ**. It is a plain text file that can be edited with any simple plain text editor, such as the Notepad utility that comes with Windows.

Setting Up Copy Protection for a Microtech Production System

After this is set in the **CDremote.cfg** file, copy protection must be enabled in the ***MyDisc*** **Submit Job** dialog (**Advanced** tab) for each set of discs being made. See page 40 for details

Microtech production systems are capable of creating discs (either custom premastered discs or duplicates of original discs) that cannot be copied. This copy-protection scheme alters the discs' structure in such a way that they can be read and used normally, but cannot be copied. Copy protection is only available when making custom discs using ***MyDisc***, and it only works on "data" (CD-ROM-type) discs, not audio (CD-DA) discs.

To enable this copy protection scheme, add (or change) an entry in the ***CD-Remote*** configuration file, **CDremote.cfg**. This is an ASCII text file that can be edited with a plain text editor (such as the **Notepad** utility provided with Windows). This file is found in the folder **C:\Icdr-MJ** on the production system.

Copy protection works by using the following statement in **CDremote.cfg**:

ProtectCount = <count>

- **To enable copy protection**, set **count** to a non-zero value. (**75** is a good choice.)
- **To disable copy protection (even if users select it when making discs with *MyDisc*)**, "comment out" this statement by adding the **#** character before it:

  #ProtectCount = 75

Designing Disc Labels

A Microtech production system can print on the surface of disc copies with text and pictures. This chapter explains the printing process in detail when using the disc duplication software, ***ImageMaker* EZ**.

Common terms used with disc printing are:

Layout

Disc printing is done by creating *printing layouts*. The layout contains all the text and pictures needed to print, positioned and sized as designed.

Linking

A printing layout can be *linked* to an image of a disc, either when the image is created from the master disc or later. When disc copies are made from an image with a linked layout, the layout will automatically be used to print the copies.

Printing layouts can be used in several ways, depending on duplication needs:

1. A printing layout can be linked to a specific image when that image is created. The layout is automatically used when copies are being made from the image.
2. Select an existing printing layout. The layout can be used as-is, or can be used as a "template" and customized for the particular discs being made (for instance, by adding your name or the contents of the discs).
3. Create a new layout for the discs. Save the layout for later use, or create a temporary layout for the job at hand and discard it when finished.

The discs may be left blank. This is *not* recommended, as it makes it difficult to identify those discs on the output spindle(s).

Printing Discs

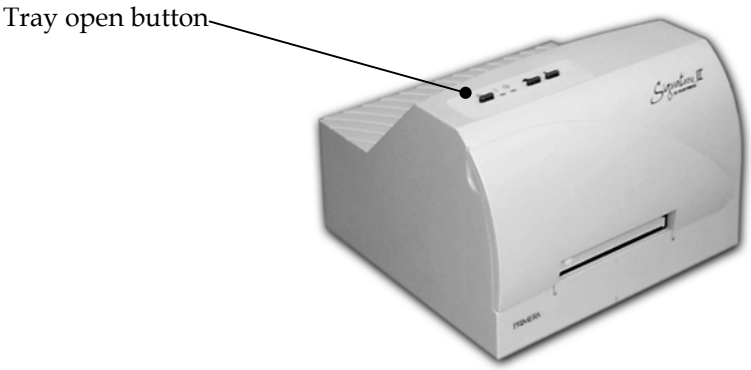
Read the section **Managing Printing Layouts** (on page 85) before starting to print multiple discs.

The next section of this chapter explains how to print the surface of discs created with a Microtech production system.
Detailed instructions for creating disc printing layouts following on page 65.

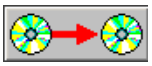
Opening the Printer Tray

To manually open the printer tray, use the tray-open button (shown below on the two types of printers available with a Microtech production system).

- For the **Perfect Image** (thermal transfer) printers
- For the **Xpressjet** (inkjet) printer
- For the **Signature** (inkjet) printers



Printing Discs When Copying Directly Disc-to-Disc

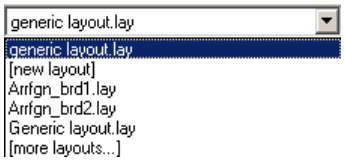


When copying discs directly from a master disc, the following choices are available for printing onto the surface of discs. (Notice that there are no print layouts linked to the disc in this case, since there is no hard-disk image.)

To Create a New Layout

Click the **Edit Layout** button to move over to the Layout Editor. This tool will have a completely blank workspace, ready to have text and pictures placed in it. (Complete instructions on creating and editing layouts start on page 73.)

After the layout is completed return to the main window and continue working there. When **Start** is clicked to begin the copy operation, the screen asks whether to save the changed layout. To save the layout, click **OK**; this opens a file selection dialog where the name for the layout can be selected and where it will be saved. To discard the layout after printing without saving it, click **Cancel**. After this, the copy-making operation will proceed.



To Use an Existing Layout

Choose the name of the layout in the **Layout Name** field. Click the arrow next to the field to open up a drop-down list of layouts. Click on the desired layout, the list will close and the name will appear in the field. The layout will appear in the Layout Editor window so it can be viewed. If no changes are made, no further action is necessary.

Changes to this layout may be made using the **Layout Editor**. When **Start** is clicked to begin the copy operation, the screen asks whether to save the changed layout. To save the layout, click **Yes**; this will open a file selection dialog where you can select the name for the layout and where it will be saved. (Save over the original layout, or create a new layout by giving a new filename.) To discard the layout after printing, click **No**.

The Discs May be Left Unprinted

This is not recommended if there is a printer installed on the disc production system. To print nothing, select the **[new layout]** item using the arrow in the **Layout Name** field. This will clear whatever layout is currently in the Layout Editor, and no printing will be done after disc copies are made.

When the copy-making operation starts, the Layout Editor workspace will be cleared.

Printing Discs When Making Copies from an Image

When making disc copies from an image, there are several choices on how to print the surface of those discs:

If the image has a printing layout linked to it, the linked layout can be used

Use the layout as-is, or use it as a **template** and make changes to the layout to customize for a specific job—for instance, adding your name, the date, or other relevant information. When a layout is changed the screen asks if those changes are to be saved. To retain the original layout **do not save changes**. If changes need to be saved for future reference, see the section **Managing Printing Layouts** on page 70 for details.

To Create a New Layout

An entirely new layout can be created to print the surface of these discs, whether or not a layout is already linked to the image. If no layout is linked, the Layout Editor will have a blank workspace. (If a layout is linked to the image, it will appear in the Layout Editor; this can be cleared to create a completely new layout, or to modify the existing one.) Click the **Edit Layout** button to move to the layout editor. Place desired text and pictures.

Move back to ***ImageMaker EZ*** by clicking anywhere in its window. When the **Start** button to start the copy operation is clicked, the screen will ask if you want to save the new layout. Click **Yes** to save the new layout, or **No** to discard.

To Use An Existing Layout

Any other existing layout can be selected to print the surface of these discs, whether or not a layout is already linked to the image. After selecting the disc image to make copies from, use the **arrow** in the **Layout Name** field to select the layout from the drop-down list. The layout selected will appear in the Layout Editor for verification. Changes can be made to the layout by clicking the **Edit Layout** to move to the layout editor. If changes are made the screen asks if these changes are to be saved.

The Discs May be Left Unprinted

This is not recommended if there is a printer installed on the disc production system. To print nothing, select the **[new layout]** item using the **arrow** in the **Layout Name** field. This will clear whatever layout is currently in the Layout Editor, and no printing will be done after disc copies are made.

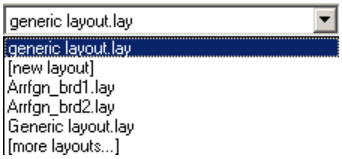
Linking a Printing Layout When Making a Disc Image

When making an image of a disc, a print layout can be linked to that image. This means that later when this image is used to make copies, that layout will be used to print the surface of these copies. (If no layout is linked when the image is created, the user can print discs surfaces using either an existing layout or by creating a new one.) If no layout is linked to an image and none is chosen, nothing will be printed on the disc surface(s). If there is a printer installed on the production system, **not printing discs is not recommended.**
To link a print layout to the image refer to Making Disc Images on page 41.

To Create a New Layout

Leave the **Layout Name** field blank. Click the **Edit Layout** button to move over to the Layout Editor. The disc layout workspace will be blank, ready to have text and pictures placed in it. (Complete instructions on creating a layout start on page 73.) After the layout is complete, return to the main window and continue working. When clicking **Start** to begin the image-making operation, the screen asks to save the layout. (The layout must be saved in order to continue making the image; if the request is cancelled the make image dialog returns.) Click **OK** in the request dialog; this opens a file selection dialog. Choose a name for the layout file. Either use the folder (location) already set in the dialog, or navigate to another folder where the layout is to be stored. Click **OK** to save the layout. The make-image operation will proceed.

To Use an Existing Layout



Choose the name of the layout in the **Layout Name** field. Click the arrow next to the field to open up a drop-down list of layout names. Click on the layout desired to select it; the list will close and the name will appear in the field. The layout will appear in the Layout Editor window so it can be viewed. If no changes are made to the layout, no further action on your part is needed.

Changes to this layout can be made, using the Layout Editor. When **Start** is clicked to begin the image-making operation, the screen asks to save the changed layout. (The layout must be saved in order to continue making the image; if the request to save is cancelled, the make image dialog returns.) Click **OK** in the request dialog; this opens a file selection dialog. Choose a name for the layout file. (Either save over the original layout, or create a new layout by giving a new filename.) Use the folder (location) already set in the dialog, or navigate to another folder where the layout is to be stored. Click **OK** to save the layout. The make-image operation will proceed.

To Not Link any Layout to the Image

Ensure that both the **Layout Name** field and the workspace in the Layout Editor are completely blank. If this is done when copies are made from the image, no layout will be linked, and by default nothing will be printed on the discs. (The user can still choose to print discs at copy time by choosing an existing layout or creating a new one.)

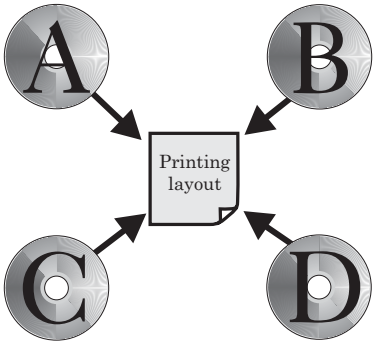
When the image-making operation starts, the Layout Editor workspace will be cleared.

Managing Printing Layouts

As more disc images are stored on a Microtech production system and more printing layouts are created, managing these layouts becomes important. This is especially true in situations where more than one person is using the system. This section explains how to maintain printing layouts in an orderly fashion.

Printing Layouts Can Be Linked to Multiple Images

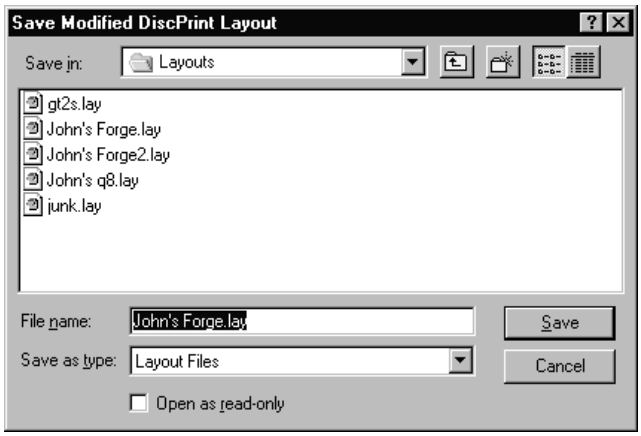
A problem can occur when more than one disc image is linked to the same printing layout. In the illustration below, all of the images link to the same layout.



Problems arise when the user who created image **A** decides to improve the layout it is linked to, and the layout is modified. The next time the user using image **B** makes discs from that image, discs aren't printed correctly because the layout has been modified. If a layout is linked to more than one image, be aware that **any** changes to that layout will affect printing for **all** the images linked to it.

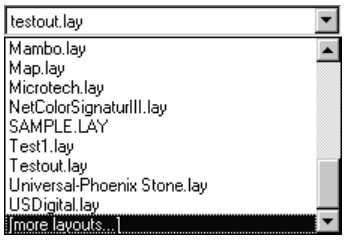
Recognize the potential for conflicts before they happen, and plan accordingly. (One solution is to create two types of printing layouts: one "public", the other "private". The agreement must be that no public layouts can be modified without consent between all who use them.)

Any time a layout is changed (in any of a number of places in the program) the screen asks if changes are to be saved. The choice is to either save the layout "over" the original layout (replacing the original layout with the changed layout), saving to another layout (either a brand-new layout or "over" another existing layout), or not saving at all. This is done by means of the **Save Modified** layout dialog:



Anytime one of these dialogs is reached after modifying an existing layout, the name of that layout will be pre-filled in the **File Name** field as a "suggested" name. To save over this layout, click **Save** (or press **Enter**). To save as a completely new layout, give the name for the new file in the **File Name** field. (Any other existing layout file can be saved over by clicking on it in the browser window.)

Using Temporary Layouts



An alternate solution to this problem is to treat a layout as temporary - to be used only for printing the discs at hand and discarded afterward. This can apply whether creating a new layout from scratch or loading an existing layout and making changes to it. (For example, a group of people may all use the same standard layout, with text and images suited to the organization they work for, but each person may want to add specific information to the disc, e.g. their name, the date, the contents of the disc, etc.)
To treat any layout as temporary, simply choose *not* to save it when asked if you want to save your changes. Disc production and printing will proceed with the temporary layout, and no changes will be made to any existing layouts.

Printing Discs Using .PRN and Adobe Acrobat Files

The Microtech production system allows printing directly from both Windows-generated printer (**.PRN**) files and from Adobe Acrobat (**.PDF**) files. Using **.PRN** files allows output to be taken directly from another application (e.g, an illustration-creating program like Adobe Illustrator or Corel Draw) and sent to the disc printer to print the surface of disc copies being made on the disc production system. A**.PRN** file may be linked to a disc image, just the same as a printing layout file.

To Use a .PRN file to Print Disc Copies

Select the file in the **Layout Name** field for the appropriate operation. Click the small arrow to the right of the field to open the list of available layouts. Scroll to the bottom of the list and select the **More Layouts** item. This will open a file selection dialog; locate the **.PRN** file, then click **OK** to open it.

When printing using a **.PRN** file, the ***ImageMaker EZ*** layout editor window will be blanked out. Though the print data will not be displayed, it will be sent to the printer.

To Use Adobe Acrobat Files to Print Disc Copies

Acrobat must be installed on the Microtech production system and the system must be configured to use it. (This is covered in the Appendix on page 60.)

On a system with Acrobat installed and configured, any Acrobat file can be selected using the method given above (look for the **.PDF** extension on the filename).

As with **.PRN** files, the ***ImageMaker* EZ** layout editor window will be blanked out. Though the print data will not be displayed, it will be sent to the printer.

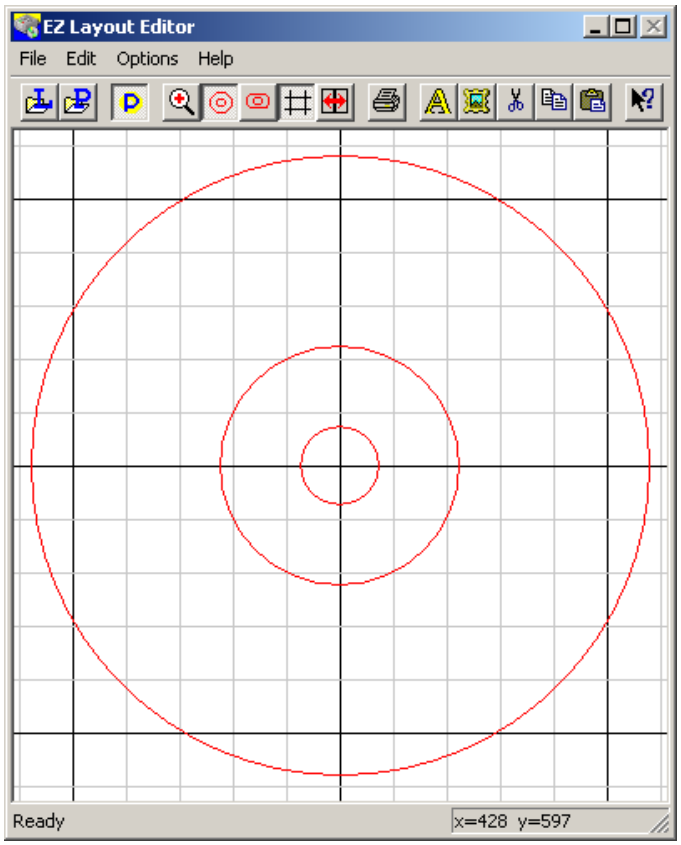
Layout Editor

***ImageMaker* EZ** provides the Layout Editor as the tool for creating and modifying disc printing layouts. This program also test-print discs to check layouts, and has other features and functions to assist with disc printing. This section contains complete instructions on using this utility.

Using the Layout Editor

When the Microtech production system production software is started, the Layout Editor automatically opens. To use this utility, click anywhere on its window (if it's behind other windows) to bring it to the front of the Windows desktop. (If the Layout Editor is minimized so it doesn't appear on the desktop, click its button on the Windows taskbar at the bottom of the screen to open it.)

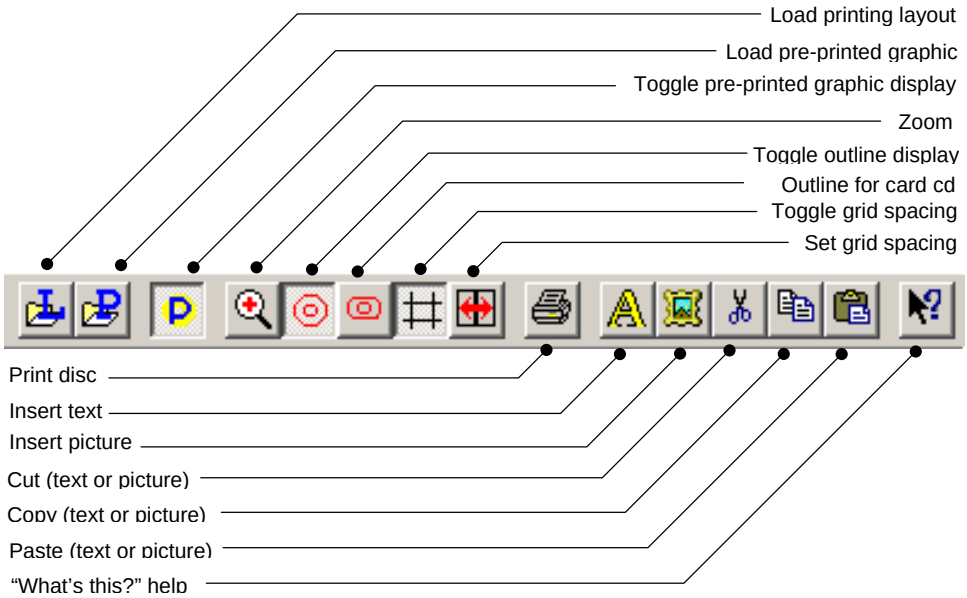
The Layout Editor window is shown below.



When starting, the disc workspace in the window will be blank. As text and pictures are added, they'll show up in the window, just where they will print on the actual discs. The Layout Editor gives a "what you see is what you get" view of the disc, with the exception of the grid and disc outlines shown. These layout aids do not print and may be removed from the display if preferred.

The Layout Editor Toolbar

The layout editor toolbar and its buttons are shown here below.

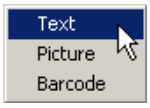


Creating a New Printing Layout

You can use the toolbar buttons and to insert text and pictures

To create a disc printing layout, arrange text and pictures on the disc where they are to be printed. To insert an item move the pointer (cursor) where the item to be on the layout should be placed and click the right (alternate) mouse button. A small menu (shown to the left here) will "pop up". Select the type of item you want to insert from the menu. (When the pointer is moved, the position on the disc grid is shown at the lower right corner. This is the position where the item will be inserted in the layout.)

When selecting the type of item to insert, the corresponding insertion dialog will appear. There are three types of items you can insert:



Text, Graphic & Bar Code Items

Three kinds of text items may be placed in a layout:

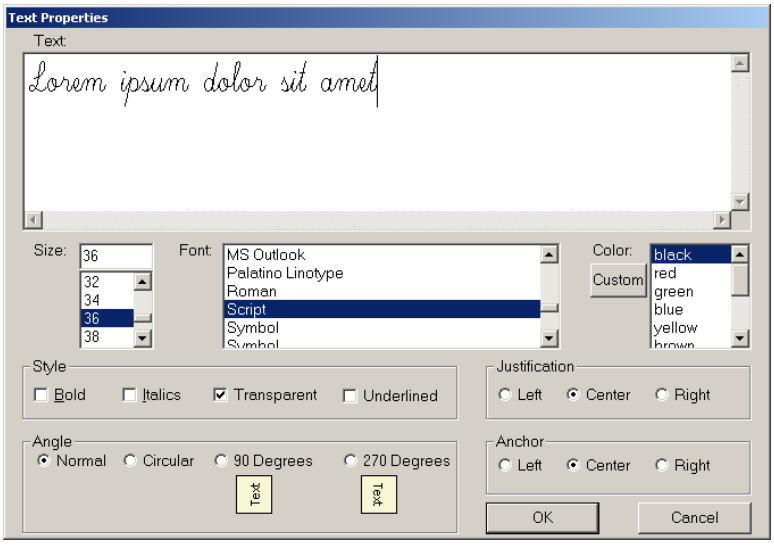
1. **Single-line text items** one line of text, of any length.
2. **Text boxes** include multiple lines of text within a box. A text box is created any time more than one line of text is inserted in the **Text Properties** dialog. Move to a new line by using the **<Enter>** key. The text within the box can be aligned to the left, center or right of the box. The box around the text is conceptual only (it does not print on discs).

Barcodes can be printed on disc surfaces. Special optional barcode fonts are required. These are available from Microtech. Contact your dealer or sales representative for information.

3. **System variable text items** are special text items that a Microtech production system will automatically place text on the disc. Several items, such as the current date and time can be placed this way. System variable text is explained on page 76.
   - **Pictures** are bitmap or vector-based digital images that can be placed anywhere on a layout.
   - **Barcodes** are special text items which encode text (letters and numbers) as standard machine-readable barcode characters.

Inserting Text Items in a Layout

Click the insert **text toolbar** button or right-click where the text item is to be placed, choose **Text** from the pop-up menu. The following dialog will appear. Fill in all appropriate items, then click **OK** to insert the text. Click **Cancel** if the text is not wanted.



Text

Type the text to appear in the text item here. Text from other Windows NT applications may also be pasted in, including non-keyboard symbols (e.g., trademark symbols like ®).

Size

Specify the size of the text (in points) here.

Tip: if any text prints over pictures on the layout, experiment with *background transparency* by doing some test prints to determine how the final result will actually look before starting production.

Font

A list of all fonts available on the Microtech production system will appear here; click on the font to select it.

Color

Select the color the text is to appear in here.

Style

Click any check items here to select the style.

1. **Bold** and **Italics** apply these characteristics to the text in the usual way.
2. **Transparent background** controls how text is printed over bitmap pictures (either a background image or a picture). When this attribute is chosen, whatever is in an underlying picture will show through the text printed over that picture. Otherwise, a white (or non-printed) area will be printed around the text over the picture.

Justification

This is the horizontal alignment in relation to the entire text selection (a box for non-circular text); **Center** will center all text within this box.

Anchor

This setting determines which part of the text item—left side, center or right side—will snap to the "playing field" grid lines when the **Snap to minor grid** option is enabled in the **Options** menu.

Angle

This item sets the angular position of the text item. There are four choices:

1. **Normal** – Text will be aligned horizontally.
2. **Circular** – Text will be arranged in a circular path around the disc, concentric with the center of the disc. The beginning and end of the arc formed by the text depend on where the text is placed on the layout.

3. **90 Degrees** – The text will be aligned vertically, starting at the bottom reading upwards.
4. **270 Degrees –** The text will be aligned vertically, starting at the top reading downwards.

Using Merged Text with DISCPRINT

Three steps to putting merged text on a Disc printing layout

1. **Defining the "fields" where the merged text will print on the layout.** A merge "field" is a variable text item placed on the layout. The variable text item's name is preceded by a dollar sign (such as $title). At the time the discs are printed, this variable is replaced by the actual merged text.
2. **Creating merged text.** The actual text to place on discs in the ImageMaker job comes from a merged text file. Typically, this information is created by a computer application, such as a database or in a text editor. The merge file contains the names of the variables you defined in the step above, plus the actual text to print in those variables' fields.
3. **Running the disc production job and printing the merged text on discs during processing.** When including merged text on discs printed with ImageMaker, you need to specify the print merge file before you start the production job. This is done by launching ImageMaker, selecting the "job function" on the left, choose the "advanced" button and select the desired merge file. The merge file is read during processing, and the merged text is printed on each disc in the job.

Text items

There are two kinds of text items you can place in a layout:
Single-line text items: one line of text, of any length.
Text boxes include multiple lines of text within a box. Create a text box when inserting more than one line of text in the **Text Properties** dialog. Use the enter key to move to a new line. The box around the text is conceptual only (it doesn't print on discs). The text within the box can be aligned to the left, center or right of the box.

Inserting Merge Fields

To insert a merge field for printing merged text, create a **merge field variable name**. This variable name can consist of any text *except* these characters: **$, #,** and **:** (colon). Each variable name is preceded by a dollar sign (**$**). The following are examples of valid merge field variable names:

$title
$tradeshow

Inserting System Variable Fields

System variables can be inserted in a layout as text items. A system variable is a "placeholder" that is replaced by a specific piece of information at the time the disc is printed. Defining a system variable field is similar to creating a merge field.
A system variable has a prefix of a pound sign (#) which distinguishes itself from normal text or merge fields. **DISCPRINT** knows to treat this text item as a variable. (Type the name of the variable, including the **#**, in the **text** field of the **Text Properties** dialog.)

Example:
The table below shows the available system variables and what information is inserted in the variable.

VARIABLE	DESCRIPTION
#Date	Current date (**DD/MM/YY**)
#Time	Current time, in 24-hour format (**HH:MM:SS**)
#Work_Order	Job name if known. Otherwise the generated CDRemote work order
#Drive_Number	ID of the drive that processed this disc
#Master_Name	Name of ImageMaker image used (if known)
#System_Name	ID name of ImageMaker system
#Serial_Number	The serial number of the disc being printed

A Note on Sizing Merge and System Variable Fields

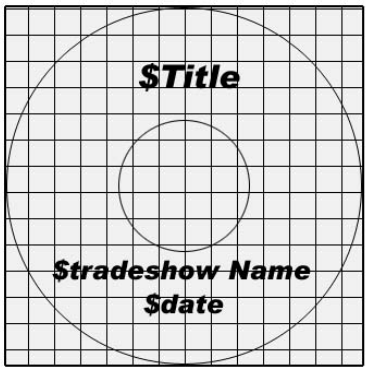
When a merge field or a system variable is inserted on a layout, as a *placeholder* for the actual text. Plan accordingly for the amount of actual text which may be printed in that field, and size the field accordingly.

The size of the text "box" surrounding the merge field or system variable will limit the amount of actual printed text which will fit in that box.

All attributes (font, size, color, etc) selected in the text dialog will be applied to the merged text or system variable. The ***anchor*** setting (left/center/right) of the text controls how the printed text will be positioned within the text box.

Creating Merge Files for Disc Printing

When using merge files with ImageMaker MJ jobs where discs are printed, the actual text which is printed in the merge fields comes from a merge file. Merge files are plain-text (ASCII) files which contain the merge text and the names of the fields where that text prints.



Disc Layout

```
title: Microtech
tradeshow name: NAB - Las Vegas
date: April 2005
PRINT_DISC
tradeshow name: GTC - Sacramento
date: May 2005
PRINT_DISC
tradeshow name: FOSE - Washington DC
date: February 2005
PRINT_DISC
```

Merge File

The illustration above shows the relationship between a layout with merge fields and a merge file which fills in those fields. Notice that the field names (preceded with **$** in the layout) are the same in the merge file, except that the **$** prefix isn't used in the merge file.

Format of the Merge File

An *ImageMaker* print merge file consists of merge field statements. Each statement is in the form

```
field: text
```

where **field** is the name of the merge field, the same as the name used in the layout but without the starting **$**, and **text** is the text to be placed in the field.

When all needed fields have been defined for printing a disc, the **Print_Disc** statement causes that disc to be printed. The example above has three **Print_Disc** statements, resulting in the three discs shown here:

Notes About Merge Fields

Not every merge field needs to be filled in to print a disc
If any merge variable is omitted for a disc—that is, there is no entry for that variable in the merge file before the Print_Disc statement—then the previous value of that variable is retained. In the example above, all discs will have the text "Magic CD" printed in the **title field**, even though this variable is only defined for the first disc.

Merge variables start out blank
Merge variables can be blanked, if desired, by putting a blank entry in the merge file. For example, to blank the **customer name** field, put in the following entry: **customer name:**

Merged text can be combined into a single line of text
To do this, put a **combine** statement in the **DISCPRINT** layout file (done manually by editing the file). This statement names two or more merge variables which are to be combined into a single line of text when printed.

Some Tips for Creating and Using Merge Files

Merge files were created primarily to allow discs to be automatically printed from a computer data source, such as a database. You can create and edit merge files "manually" however the real power and utility of this feature comes when the merge file is written without manual intervention. Contact Microtech for more information on how to create custom applications using merging.

While merge files were designed to print unique discs within a job, you can also use them to create identical discs in a job. Simply create entries to print a single disc in the merge file, with one **Print_Disc** statement. The data in merge variables are retained, allowing the same entry to print all discs in the job

Inserting System Variable Text Items

System variable text items can be placed in a layout just like ordinary text items. A system variable is a "placeholder" which is replaced by a specific piece of information—for example, the current date or time—at the time the disc is printed. When a system variable item is placed in a layout, the item is replaced by text generated by the system at print time.

A system variable is distinguished from normal text items by having a pound sign (**#**) as a prefix—for example, **#Date**. This tells the system to treat this text item as a variable. (Type the name of the variable, including the **#**, in the **Text:** field of the **Text Properties** dialog.) **Each system variable text item must be completely separate from other text items.** Only the variable text should appear in the **Text** field of the **Text Properties** dialog.

The table below shows the available system variables and what information is to be inserted in each item.

VARIABLE	DESCRIPTION
#Date	Current date (**DD/MM/YY**)
#Time	Current time, in 24-hour format (**HH:MM:SS**)
#Work_Order	Work order (from job card)
#Drive_Number	Which disc drive made/processed this disc
#Master_Name	Name of ImageMaker image used
#System_Name	ID name of ImageMaker system

Note that when the item is inserted in the Layout Editor, the name of the system variable—for instance, **#Date**—will be displayed on the layout on screen. When the disc is printed, though, that text will be replaced by the actual date text.

The text printed by system variable items is formatted just like ordinary text. To change the font, font size, and any other characteristics of a system variable text item, right-click on the item and choose **Edit** from the small menu that pops up. Use the **Text Properties** dialog to format the text item.

Note on Date and Time Formatting

When using the **#Date** and **#Time** system variables, the resulting text is formatted according to the settings of the **DateFormat** and **TimeFormat** configuration statements in the **jobmgr.cfg** configuration file. The output format can be changed by editing these statements. (The statements are documented by comments in the configuration file.)

The default date format is **MM/DD/YY**, and the default time format is **HH:MM:SS**.

Positioning Text Items in a Layout

The two basic types of text items—single lines and text boxes—are each handled differently when it comes to how the text is positioned on the layout. (Note that system variable text items are treated the same as single-line text items as described below.) Each type works as follows:

Single-line Text Items

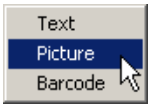
The text is positioned wherever it is placed on the layout. The **Justification** setting has no effect on positioning for single-line text items. The **Anchor** setting controls the way the text item will snap to the "playing field" grid if the **Snap to minor grid** option is enabled. The **Angle** setting controls the item's angular position. (Single-line system variable text items are treated the same as ordinary single-line text items.)

Text Boxes

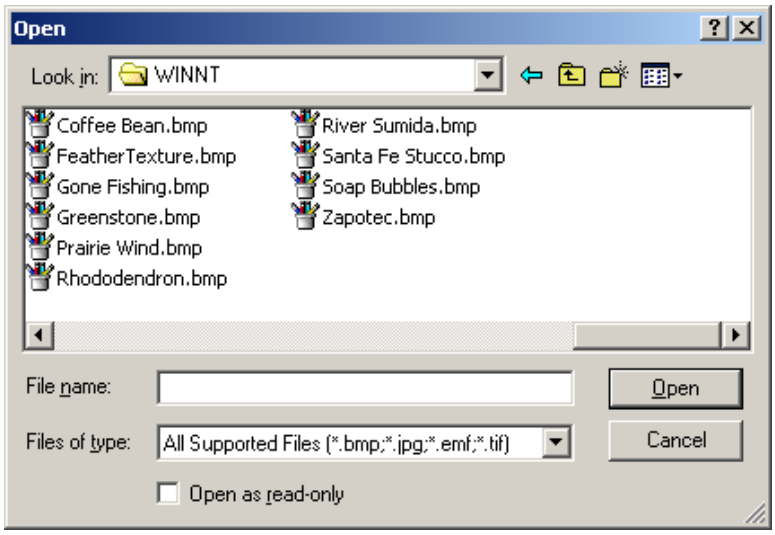
These are multiple-line text items. The position of the entire item is wherever it is placed on the layout. The position of each line of text within the text box is controlled by the setting of the **Justification** control (**Left**, **Center** or **Right**). For **Left** justification, all text is aligned to the left side of the text box; for **Center**, the center of the box, and so on.

The **Anchor** setting controls how the text item will snap to the grid if the **Snap to minor grid** option is enabled.

Inserting Pictures in a Layout



Click the insert picture toolbar button or right-click where the picture is to be placed, choose **Picture** from the pop-up menu. The following dialog will appear. Select the file containing the picture to be inserted, then click **OK** to insert it. (Click **Cancel** instead if the pictures is not wanted.)



This is a standard Windows NT file selection dialog. The picture file must be in one of following types of picture formats:

File Extension	File Type
.BMP	Windows/OS-2 bitmap pictures
.JPG	JPEG (Joint Photographic Experts Group) pictures
.WMF	Windows metafile format (vector)
.EMF	"Enhanced" Windows metafile format (vector)
.TIF	Tagged-image file format (TIFF) †

† Only *uncompressed* TIFF files can be used with the Layout Editor.

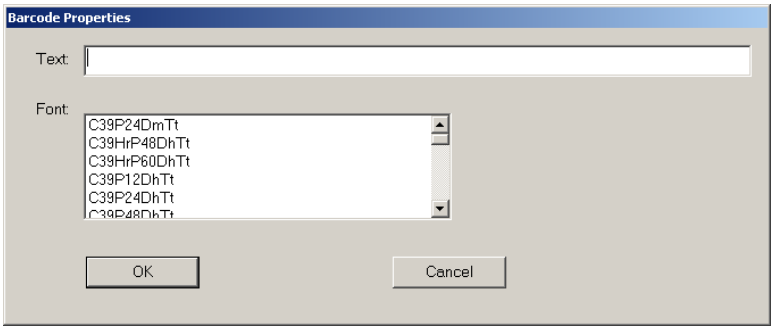
Caution: When a picture is inserted into a layout, a link to the file containing the picture gets inserted into the printing layout. If the file containing the picture is ever moved to a different folder, renamed or deleted, or if the layout is moved someplace where the picture file is no longer accessible, the picture will disappear from

the layout. To prevent this take care whenever moving printing layouts or any picture files used in printing layouts. It is easier to remove the picture than to re-insert the picture after moving the files.

Inserting Barcodes in a Layout

When choosing **Barcode** from the pop-up insertion menu (see sidebar note) the following dialog will appear. Fill in all appropriate items, then click **OK** to insert the barcode. Click **Cancel** if the barcode is not wanted.

Printing Barcode requires special, optional fonts to be used with the layout editor. Ask your sales representative or Microtech customer service for more information.



Text

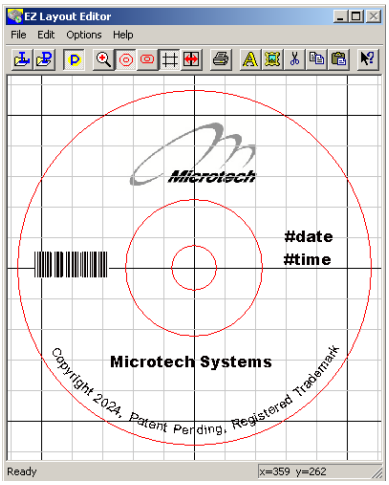
Type the text to be interpreted as a barcode here.

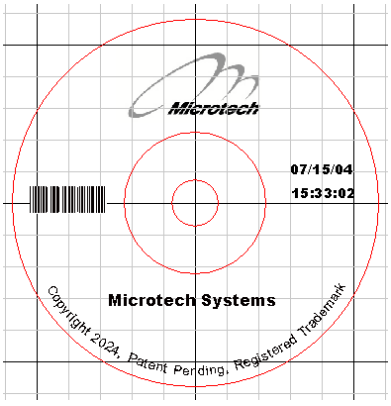
Font

Select the barcode font to use. (The list is a complete list of all available barcode fonts, not those that are actually installed on the Windows NT system. Use the Windows NT **Control Panel** to check which fonts are installed.)

A Complete Example

Below is an example of a layout showing all the available items that may be included.





Note

- The picture in this case was in the Enhanced Metafile (EMF) format, one of the new standards for Windows-based image files.
- Note how the system variable text items (**#Date** and **#Time**) are substituted when the disc is printed.
- The bottom line of circular text was inserted as a single-line text item with the **Circular** attribute checked in the **Text Properties** dialog.

Moving and Resizing Items in a Layout

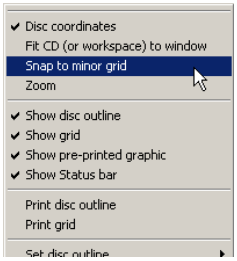
To move any item in a layout (text, picture or barcode), select the item by clicking on it in the layout, and drag it to the correct position while holding down the mouse selection button.

Barcode items should *not* be resized, as this may make them unreadable.

Note: a picture may be distorted by resizing it non-proportionally (more in one dimension than in the other).

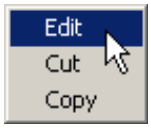
When an item is selected, it may be moved and/or resized. To move an item, click anywhere in the interior of the object (text item or picture); the cursor will change to a four-headed arrow, as shown below. To resize an item, select the item by clicking on it, then click on any of the eight "handles" around the outside of the object. By dragging the handle (with the mouse button held down), the object can be resized in the direction of the handle. The side handles (top, bottom, left & right) resize in that direction only, while the corner handles resize the object proportionally (in both width and height. The object changes size but keeps its same shape.

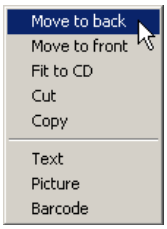
Single-line text items cannot be resized. The text boxes which enclose multiple-line text items can be resized (the text itself cannot), which can affect how the text item will be anchored (when **Snap to minor grid** in the **Options** menu is enabled), the position of text within the text box (depending on how the text is justified) and the position within the layout.) See page 81 for more information on how text items are positioned.)



If the **Snap to minor grid** option (in the **Options** menu) is checked, then the item will snap into position to the nearest minor grid. (The minor grid is shown in a lighter color than the major grid.) The spacing of the minor grid can be changed by clicking on the **grid-spacing** toolbar button. In the case of text items, the part of the item that will snap to the grid depends on the setting of the **Anchor** control in the **Text Properties** dialog for the item. (Pictures always snap to their upper and left edges.)

Besides moving and resizing items in the layout, their **properties** can be changed. Pictures can be placed on top of or behind other pictures or text; text can be edited and its properties modified. For either item, these functions are available through *context-sensitive* menus; these are small menus that pop up when right clicking (using the right mouse button) on the item you want to change. The menu shown at the left below is the text-editing menu displayed when right-clicking on a text item. The menu on the right comes up when .





Deleting Items from a Layout

Any unwanted items (pictures or text) can be removed from a disc layout. Select the item to be removed, click the right mouse button to bring up the pop-up menu and select **Cut** from this menu to delete the item.

Saving a Layout

When the layout is completed, save to use or modify it later. To save a layout, select **Save...** from the Layout Editor's **File** menu. In the dialog that appears, select the folder to save the layout in and give the layout a name if creating a new layout, or select an existing layout file if modifying a previously created layout.

Opening a Layout to Make Changes

After a layout is created and saved it may be opened at a later time and changes made to it, or it can be printed. Choose **Open layout...** from the Layout Editor's **File** menu, or click on the **Open layout file** button on the toolbar. This will load the layout file along with any pictures in the layout.

Viewing Disc Printing Layouts with the Layout Editor

The Layout Editor shows what a particular disc layout looks like, complete with all text and pictures. To view a layout, use the open layout button on the toolbar or select **Open layout...** from the **File** menu. When a layout is opened, all of its components (including any pictures and pre-printed graphics) are loaded.

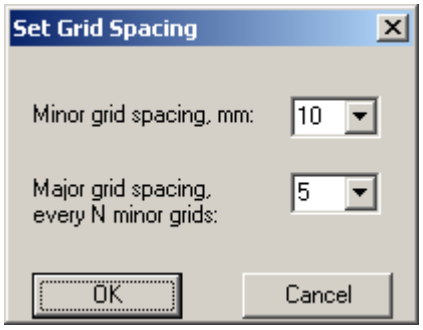
The layout displayed in the Layout Editor's workspace is the active layout that will be used to print discs.. To use a different layout, either open a new one, or create a new layout.
When a layout is opened, it will be displayed in the Layout Editor's workspace. The following choices may be used to control how the layout is displayed:

Display a Grid Over the Layout

By clicking the grid button on the toolbar (shown here), an alignment grid will be shown over the disc layout. The grid has lines spaced 100 location units (or 10 mm) apart to help you line up text. **To remove the grid display**, click the grid button again.

Select the Grid Spacing

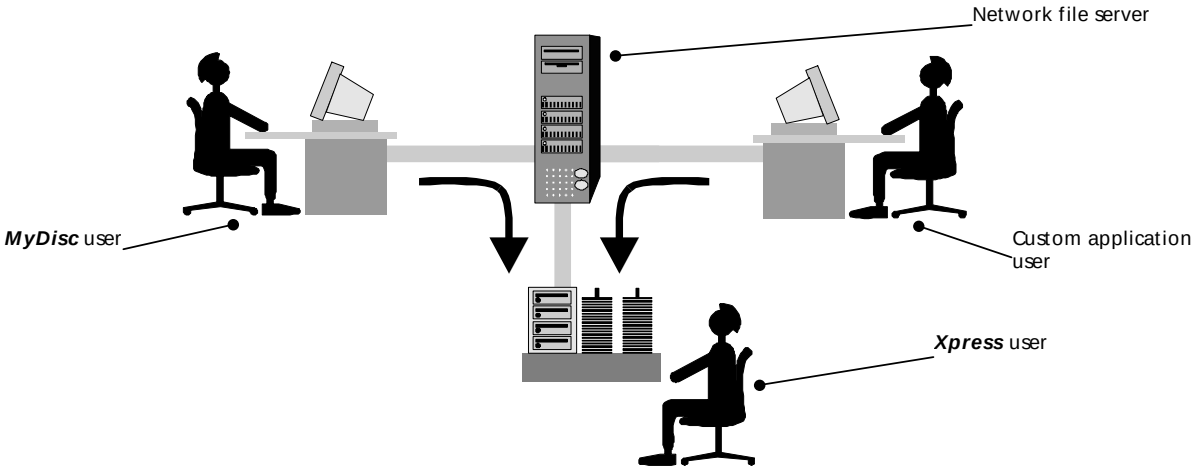
The grid spacing button on the toolbar sets the spacing between lines on the grid. Clicking on this button opens the grid spacing dialog. Select the spacing values for both the "major grid" (darker lines) and "minor grid" (lighter lines). The minor grid spacing is given as millimeters between lines, while the major grid spacing is given as a number of minor grid lines.



CD-Remote
Job Management

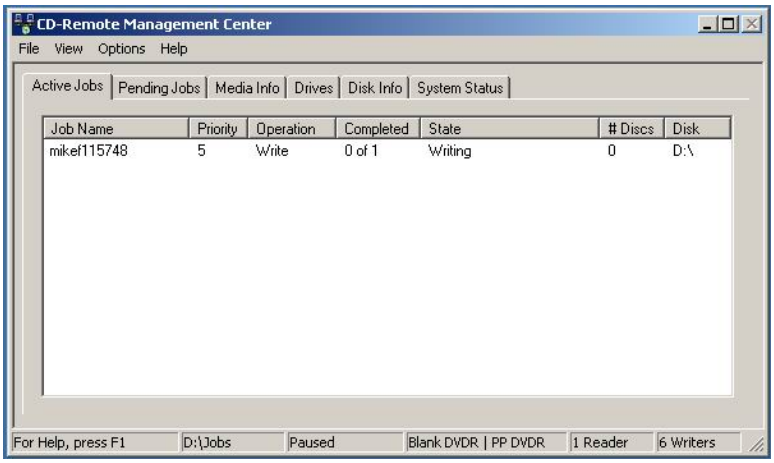
Using the *CD-Remote* Management Center

Jobs—orders to make discs—can come in from any one of several sources at any time. The "referee" that coordinates all these jobs and makes sure they get taken care of in an orderly fashion is the ***CD-Remote*** background process. ***CD-Remote*** also has an interactive part (a "user interface") that can be used to view and manage jobs. The following section describes this software.



Opening the CD-REMOTE Management Center

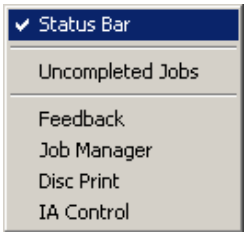
CD-REMOTE includes a handy utility which lets you control and view status for most aspects of its operation. This utility is called the **CD-REMOTE** Management Center, and it opens when you start the **CD-REMOTE** process. (If it's not visible on the Widows desktop, click its button on the Windows taskbar at the bottom of the screen to open it on-screen.) Its window is shown below.



There are 6 "tabs" here, each covering a different aspect of **CD-REMOTE** operation. Select the one you want by clicking on its tab shown across the top of the window.

Each tab is covered in order below. First, let's look at the general functions of the Management Center.

The lowest bar on this window is always visible when the window is open and contains a space that will display one of the following messages: **INITIALIZING, RUNNING, PAUSE, NO WRITERS ENABLED or OUT OF MEDIA**. These self explanatory messages reflect the status of the entire Microtech production system.



Showing Auxiliary CD-REMOTE Windows

There are several auxiliary windows associated with CD-REMOTE which can be hidden or shown as needed. The View menu contains check-mark items for all of these windows. To view a window (allow the window to exist on the Windows desktop), check the item; to hide, make sure the item is unchecked. (If an item is viewable, it can either be open on the desktop or minimized, like any other Windows window.)

These windows are generally only for troubleshooting purposes. If you experience problems with your system, you may be asked to open these windows by Microtech customer service staff during over-the-phone technical support.

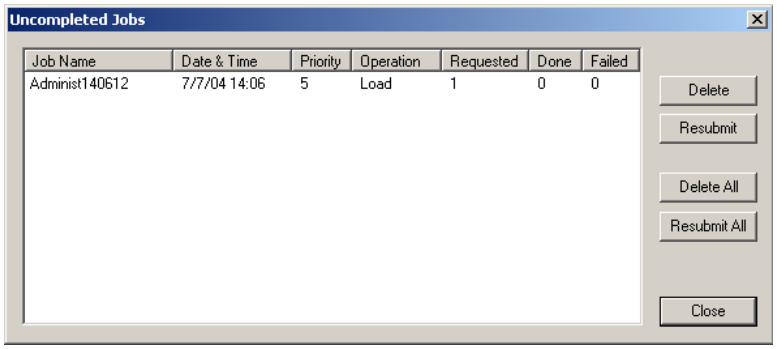
Here are the available windows which can be "checked" on or off:

WINDOW	FUNCTION
Feedback	Opens "classic" **CD-REMOTE** console feedback window
Job Manager	Viewing status information about disc production jobs
DiscPrint	Viewing and editing disc printing layouts †
IA Control	Information and diagnostics for disc handling system

Note that the **DISCPRINT** window will only be visible if this process is running (this will be the case when disc production is under way on a system with a printer installed). The **DISCPRINT** window is identical to the Disc Layout Editor used in ***ImageMaker* EZ**, and very similar to the **Create disc label** tab in the ***MyDisc*** custom disc creation program.

Viewing Uncompleted Jobs

This item in the **View** menu opens a window showing a list of uncompleted jobs; it's not a checkmark item like the other ones described above. The **Uncompleted Jobs** list is shown here.



Uncompleted jobs are jobs on which production was started, but which didn't complete for some reason—in other words, not all the discs requested for the job were made. (There are many reasons why this could happen, including user cancellation and errors.)

This dialog lets you perform the following actions on uncompleted jobs:

- **Deleting jobs:** Deleting an uncompleted job will remove the job from the system, with no further job execution.
- **Resubmitting jobs:** Resubmitting an uncompleted job will restart the job and make the number of discs which will complete the order.

You can use the Delete All and Resubmit All buttons to delete and resubmit all jobs in this list, respectively.

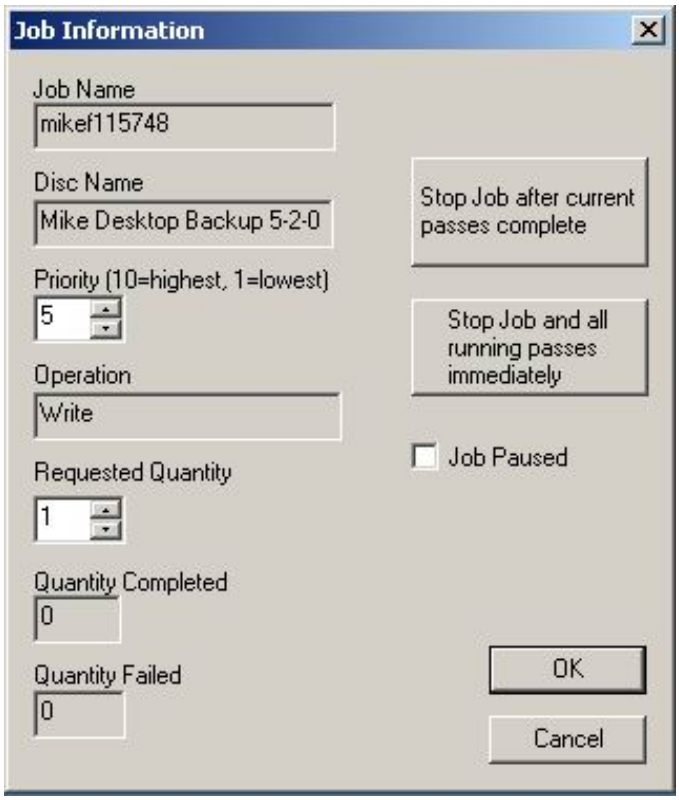
The *CD-Remote* Management Center Tabs

Active Jobs Tab

This tab (see illustration on page 89) shows all disc production jobs currently active on the system. For each job, the following information is given:

- **Job name**
- **Disc Name**
- **Job priority** (higher numbers = higher priority)
- **Operation** (what operation is currently being performed on the system)
- **Number of discs completed**
- **Job status**

More details about a job, job settings and cancel jobs may be displayed by double-clicking on a job entry in this tab. The following dialog will open.



The following aspects of a job may be changed here.

Caution: if you stop a job immediately, all of the discs currently being made will be useless and must be discarded.

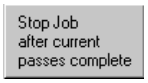
Priority

This is a setting that affects how soon a job will be processed, compared to other jobs. The higher the number here, the higher the job priority. Change the number by typing it in or by using the "spinner" controls. (Priority values range from 1 to 10.)

Requested Quantity

The number of discs requested for the job may be changed by typing in a new number or by using the "spinner" controls.

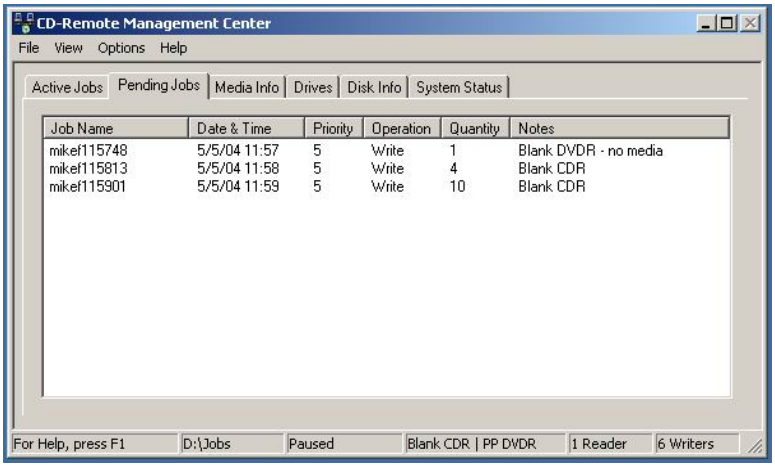
Stopping a Job



Stop Job after current passes complete waits until the current "pass" (batch of discs being made) is complete.

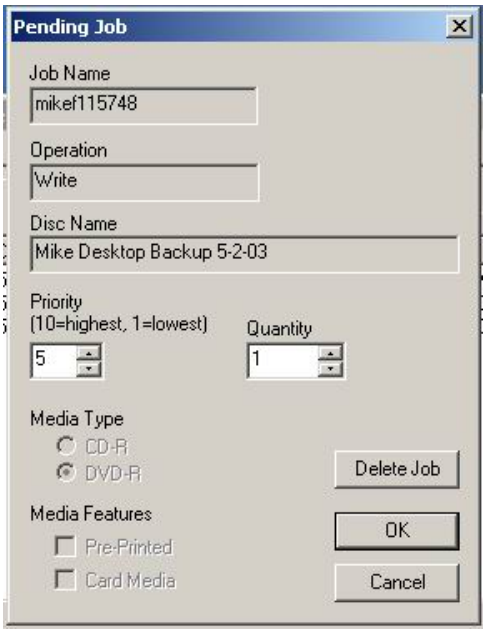
Stops Job and all running passes immediately stops all job processing without waiting for the current pass to complete. *This is NOT recommended*.

Pending Jobs Tab



This tab shows all pending jobs—jobs that have been submitted to ***CD-Remote*** but not yet started. All the same information (except for job status) is given as on the **Active Jobs** tab.

You can double-click on any job in this tab to view additional information about the job, to change job settings or to cancel the job. If you double-click on a pending job, the following dialog will open:

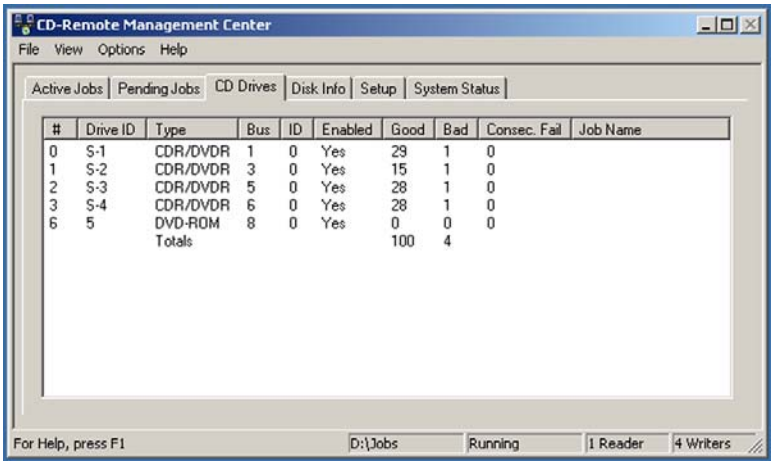


To change the job's priority, change the number in the **Priority** field (by typing a new number or by using the spinner controls).

To change the number of discs to make in this job, change the number in the **Quantity** field.

To cancel the job, click Delete Job.

Drives Tab

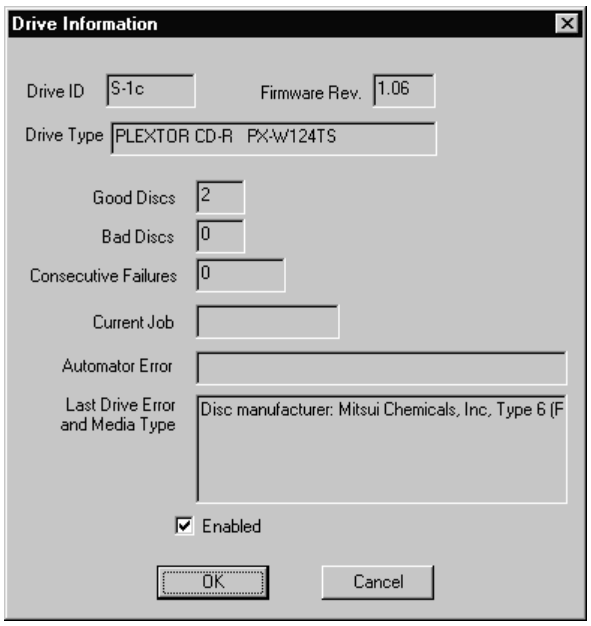

CD-Remote Management Center
File View Options Help
Active Jobs | Pending Jobs | CD Drives | Disk Info | Setup | System Status
| Drive ID | Type | Bus | ID | Enabled | Good | Bad | Consec. Fail | Job Name
0 S-1 CDR/DVDR 1 0 Yes 29 1 0
1 S-2 CDR/DVDR 3 0 Yes 15 1 0
2 S-3 CDR/DVDR 5 0 Yes 28 1 0
3 S-4 CDR/DVDR 6 0 Yes 28 1 0
6 5 DVD-ROM 8 0 Yes 0 0 0
Totals 100 4
For Help, press F1
D:\Jobs
Running
1 Reader
4 Writers

Information about all installed disc drives on the disc production system is shown here. The following items are given for each drive:

- **Drive #** (from 1 to #-of-drives)
- **Drive ID** (how the drive is identified to the software)
- **Type** (reader or writer)
- **Bus** (the number of the SCSI bus the drive is connected to)
- **ID** (SCSI ID)
- Whether the drive is currently enabled

- Number of good discs made
- Number of bad discs made
- Number of consecutive failures (bad discs made)
- Name of job currently running on drive (if any)

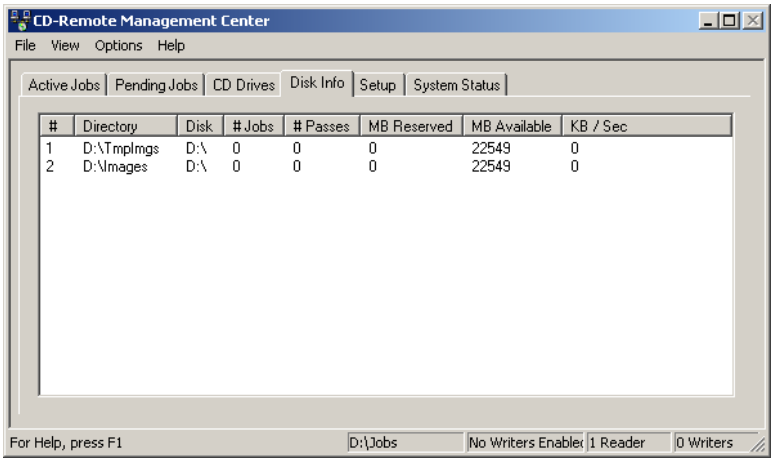
You can get additional information about each drive, and also disable or enable a drive, by double-clicking on the drive's entry in the list. The following dialog will appear:



To disable a drive, clear the checkmark in the **`Enabled`** control and click OK. To re-enable a disabled drive, check this item.

Disk Information Tab

All disc directories (folders) which are used for disc image storage are shown here. Normally, there will only be one such folder on a standard Microtech disc production system. If there are multiple folders, they are used in the order they appear in the list.


CD-Remote Management Center
File View Options Help
Active Jobs Pending Jobs CD Drives Disk Info Setup System Status
Directory Disk # Jobs # Passes MB Reserved MB Available KB / Sec
1 D:\TmpImgs D:\ 0 0 0 22549 0
2 D:\Images D:\ 0 0 0 22549 0
For Help, press F1
D:\Jobs
No Writers Enable
1 Reader
0 Writers

For each folder, the following information is shown:

Directory: the full pathname of the folder, starting with a drive letter

Disk: the disk drive which contains the folder

 # jobs: how many jobs are currently using this folder

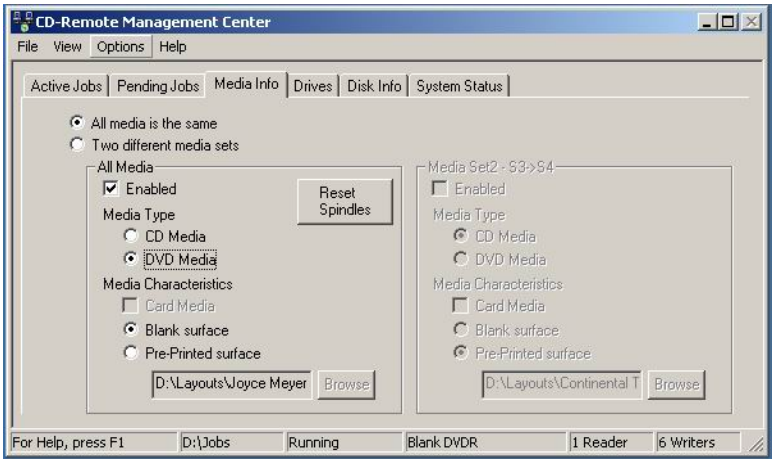
MB reserved: how much data space, in megabytes, is reserved for images in this folder which are currently being loaded

MB available: how much data space, in megabytes, is available for image storage in this folder

KB/Sec: The speed of the last data copying operation that involved this drive.

Media Tab

The **Media** tab contains one item which concerns the type of media (blank discs) which are loaded in the production system controlled by **CD-REMOTE**. This tab is shown below.



The Xpress Production System operates in one of two fundamental modes.

All media is the same

This mode requires that all blank discs loaded on the system are of a single type with identical characteristics such as identical print surface, or silk-screen (if applicable). In this mode, you may load up to the 600 blank discs on the Xpress system. There will be a single media definition box to describe the type of media loaded on the system.

Two different media sets

This mode permits you to load two different media types on the Xpress. These can be any combination of media types, such as CD-R and DVD-R. In this mode, the maximum amount of blank media that can be loaded is 200 of each type of media. There are two media definition boxes used to describe the characteristics of each type of media present on the system. In this mode, the first media type must be loaded on Spindle 1, and as it is processed, it will be placed on Spindle 2. The second media type must be loaded onto Spindle 3 and as it is finished, it will be placed upon Spindle 4.

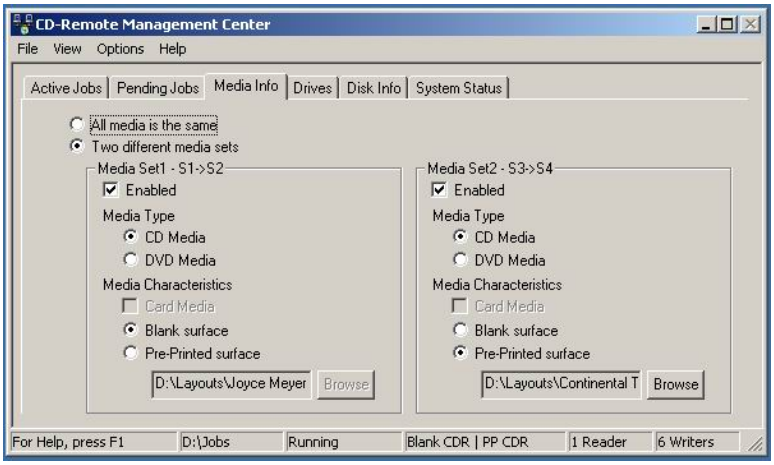
The Media Definition Box must correctly describe the type of media loaded onto the system. The settings include disc type (CD vs. DVD), and the print surface (blank vs. pre-printed).

Blank surface means that the blank discs loaded in the production system are unprinted, and that the ***ImageAligner*** capability (if it's installed on the production system) will not be used.

Pre-Printed surface means that the blank discs loaded in the production system are pre-printed, and therefore any print jobs sent to this production system will use the ***ImageAligner*** capability to align the printing to be done in the production job with that pre-printed image.

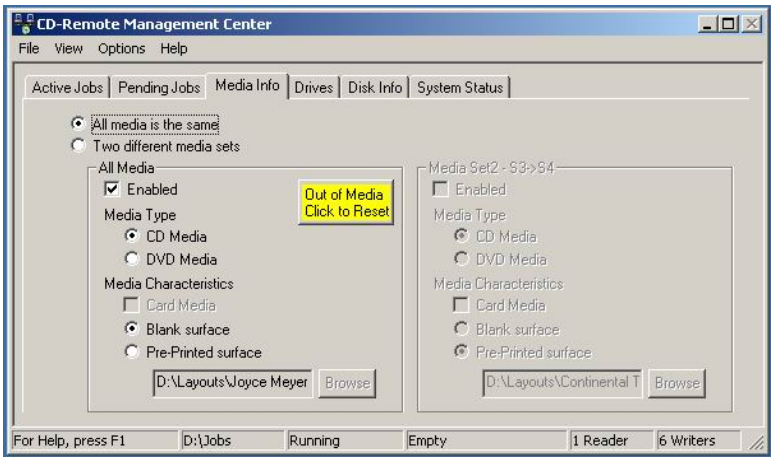
If you select the **Pre-Printed surface** choice, you'll need to tell the system which pre-printed graphic (PPG) file to use. This is the **DISCPRINT** (AKA the Disc Layout Editor) pre-printed graphic file which was used to "train" on the image of the pre-printed discs. **You must use the right PPG file for the discs loaded on the system, or printing will not work correctly**. (Use the Browse button to open a file-selection dialog to select this file.)

In the "All media the same" mode, there is a button to "Reset Spindles". If you click this button, it tells the Xpress to start loading media from Spindle 3 and to place it on Spindle 4 when complete. Once Spindle 3 is empty, the system will automatically move to loading discs from Spindle 2, placing the finished discs upon Spindle 3. And, again when Spindle 2 is empty, the system moves to load from Spindle 1, placing finished discs upon Spindle 2. In this manner, the system can process 600 discs unattended. If at any point you reload fresh blank media on the system, you must click the Reset Spindles button to get the system to start over loading discs from Spindle 3.



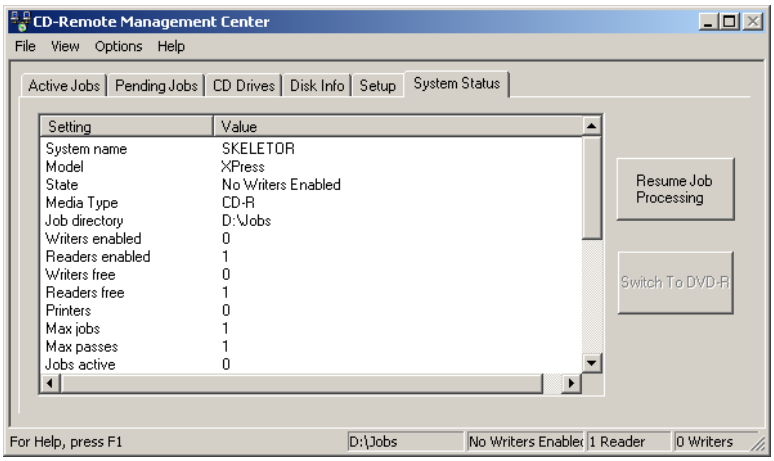
In the "Two Different Media" mode, you must correctly describe both sets of media loaded on the Xpress. The definition boxes are labeled "Media Set 1 - S1->S2", and "Media Set 2 - S3->S4". This indicates which spindle will be used for the processing of each media set. The settings within the media definition boxes are the same as for the single media setting. However in this mode, there is

no button to "reset spindles" as all four spindles are dedicated as input and/or output.



In either mode, if the system runs out of input media, you will see a button labeled "Out of Media, Click to Reset" button. This only appears when the system has completed the last disc from the input spindle for that set of media. You must reload the spindle with fresh blank media and click the button to continue operation with that media set.

System Status Tab

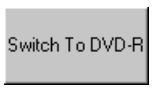


The **`System Status`** tab shows general information about the disc production system and **CD-REMOTE**. It also lets you suspend and restart job processing, and lets you switch between CD-R and DVD-R writers on the disc production system. The exact type and amount of information can vary. Sometimes there will be more information than will fit in the window, as in the illustration above: in this case, use the scrollbar controls to view the items not visible.

Suspending jobs: The top button can be used to suspend job processing. If you click it, no new jobs will be accepted by **CD-REMOTE**. Any discs currently being processed will finish, and then all processing will stop.

If you suspend new job processing, the *Suspend Job Processing* button will change to "Resume Job Process" button. To restart job processing, click this button. All queued jobs will be serviced in order.

Switching between CD-R and DVD-R writers: The second button switches operation between CD-R and DVD-R writers. On systems which have both types of writers installed, clicking this button switches between "CD mode" and "DVD mode". In either mode, only drives (writers) of that type are enabled. (This is equivalent to going to the **CD Drives** tab and manually enabling and disabling drives.)



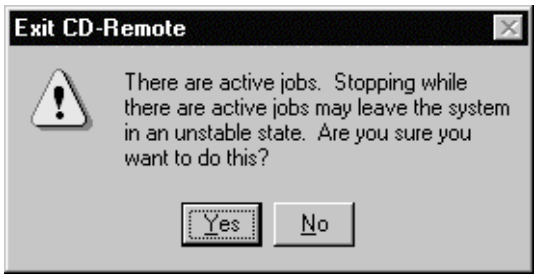
When you click this button, it changes into the opposite button so you can toggle between CD-R and DVD-R. The current mode is shown in the status display (under the item **Media Type**)..

All disc drives are automatically enabled whenever **CD-REMOTE** is started, so disabling drives as described here is only temporary. (Drives can be permanently disabled by modifying the configuration file **`CDRemote.cfg`**.

Disabling and re-enabling disc drives on the production system: On the **CD Drives** tab, you can disable disc drives so they won't be used for any disc reading or writing operations, then later re-enable them. (This is intended for use during troubleshooting only.) See page 137 for details.

Closing CD-REMOTE

To close **CD-REMOTE**, choose **`Exit`** from the **`File`** menu in the **CD-REMOTE** Management Center. If there are no active jobs running on the system, the process will just close. If there are any active jobs running, you'll get the following warning dialog:


Exit CD-Remote
There are active jobs. Stopping while there are active jobs may leave the system in an unstable state. Are you sure you want to do this?
Yes
No

It is recommended that you let all jobs run to completion before shutting down **CD-REMOTE**. However, if you understand the potential repercussions and want to shut down this process immediately, click on yes.

Serialization

ImageMaker's Serialization

ImageMaker lets you serialize each disc copy you make with a unique identifying number or code, giving you or your customer a way to track and restrict the usage of a software product or service distributed on disc. This section explains how to use the serialization facility.

A serial number is an identifier—either a number or some other string of characters—which is placed into the data on a disc to allow that disc to be validated or associated with a certain authorized user or buyer. The serial number can be any combination of characters (that is, each character in the serial number can have any of the 256 possible values of a byte of computer data); typically, though, it will simply be a number.

The serial number is embedded into the data on the disc. The end user (whoever creates the master disc to be produced) must plan where that serial number will go and how it will be formatted and generated. Once these decisions have been made, there are three parts of the serialization process:

String Search

Before ImageMaker creates the master image for the serialized discs, the user must embed a **search string** in the data which will appear on the final production discs. The search string is an arbitrary string of characters which is used to determine where the actual serial numbers will be placed. It can go anywhere in the disc, the user simply places the search string in one of the files used to create the final disc which will be mastered.

SNMaster

After the search string is placed in the master data and an ImageMaker master image made from the master disc, that master image needs to be processed for serial number insertion before the disc production job is run. The utility program **SNMASTER** is used for this task. This utility requests information from the operator, including the search string and formatting information for the serial numbers. It then searches the master image for the search string, locates the insertion point for the serial number, and writes this information (including instructions on how to format the serial number) back into the master image dataset.

Enable Serialization

The master image is now ready to be used to make serialized copies. When it comes time to run the disc production job, the operator sets up the job in the usual way. Before running the job, the operator enables serialization in the dialog box, along with an other serialization choices before starting the job. When the job is started, production proceeds normally, with serialization done automatically for each disc in the job. (If the discs are verified after being written, serial numbers are skipped over to avoid false miscompare errors.)

Limitations of Serialization

Only single-track ISO 9660 CDs (with 2,048-byte sectors) can be serialized.

Standard and Customized Serialization Methods

ImageMaker MJ comes with a standard serialization method as part of the software. This method writes a numeric sequential serial number (e.g., 1001, 1002, 1003, …) to each disc in a production job, starting from a given number supplied by the operator.

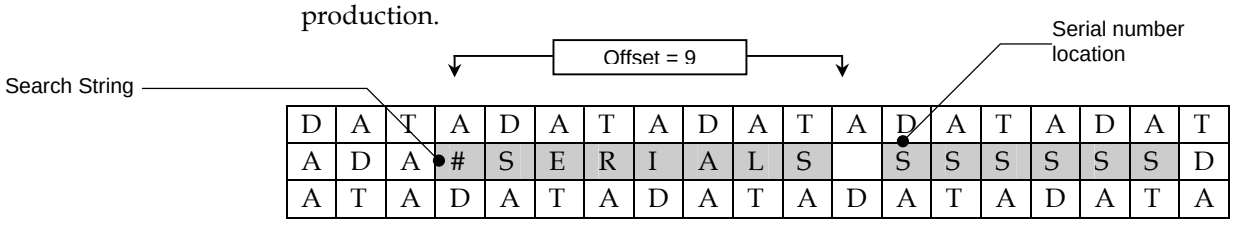
ImageMaker allows you to substitute your own serialization method by creating a customized software module (a DLL) and using it instead of the standard one which comes with the production system. This allows serial numbers to be created practically any way you choose, including reading pre-assigned serial numbers from a file and placing multiple serial numbers on each disc. (The **SNMASTER** utility supports multiple serial numbers per disc.)

For more information and technical literature about custom serialization, contact your sales representative or Microtech.

Setting Up the Master for Serialization

The first step in serialization is deciding how the serial numbers will be embedded in the data on disc. This needs to be done both for the sake of the disc producer (so they know where to look for serial numbers on their customers' discs), and for the sake of ImageMaker, so it knows where to put the serial numbers on disc and how to format them.

Serial numbers can go anywhere on a disc; their location on the disc is a decision to be made by the programmers putting together the disc product. The link between the creator of the disc and ImageMaker is a serial number **search string**. The diagram below shows a small piece of the data on a disc where each square represents one byte (character) of data. In the middle of this data are two shaded areas. The first area is the search string; the second is the place where the actual serial numbers will be written during disc production.



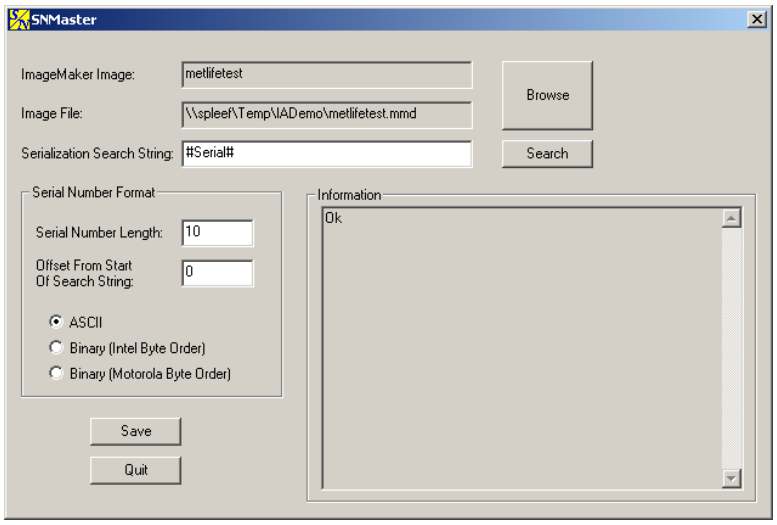
The search string can be any text (printable) characters. (It is **`#Serial#`** in this example.) You decide what this text will be. Since this string will later be used by an ImageMaker utility (**SNMASTER**) to locate the place in the image where the actual serial number is to be inserted, the designer of the disc must give this search string to whoever will process the master image before serialization. (You must make sure that this string will be unique across the entire disc, since **SNMASTER** searches the entire image.)

Likewise, the serial number itself can vary in length (up to a certain limit). The area where the serial numbers are to be inserted can contain any data in the original master disc, since these bytes will be overwritten by the actual serial numbers when the production job is run. Also notice in the example above that the serial number is *offset* from the search string by 9 characters. The serial number can be any (small) distance away from the beginning of the search string; if the offset is set to zero, it will overwrite all or part of the search string. The offset distance is selected when you run the **SNMASTER** utility (see below).

To summarize this step, the creator of the disc to be produced chooses the location of the serial number in the disc dataset by embedding a search string somewhere in the data (in one of the files which makes up the disc product), and leaves room for the actual serial numbers to be written to the disc.

Using SNMaster to Prepare Master Images for Serialization

After the master disc has been made, and an ImageMaker master image has been made from this disc, the SNMaster utility prepares the image for production with serial numbers. This utility is in the ImageMaker MJ folder. To run it, click the Windows start button. In the list of programs that appears, move to the folder labeled **ImageMaker**. In this folder, select and click once on the item **SNMaster**. The utility's main dialog will appear as shown here below.



Below are the steps which need to be done to prepare an image for serialization:

1. Select the image, using the **`Browse`** button to open the file selection dialog. This is a standard Windows file selector. Only valid ImageMaker image files (of both the older **`.CTL`** and the newer **`.MMD`** variety) are shown in the browser. When you've located the file, click **`OK`** to open it.

2. Enter the serial number search string in the field provided, then click the **`Search`** button to find the string in the image. When the string is found, a message indicating this will appear in the **Information** box.

3. Select the serial number formatting options in the **Serial Number Format** group of controls:

Serial Number Length

This selects the length, in bytes, of the serial number to be embedded. The usable range of lengths depends on the serial number format:

For serial numbers in ASCII format: the longest possible serial number is 10 digits (the highest possible value for a serial number being 4,294,967,295. If the serial number length is too small for the serial number value, the number will be truncated (excess digits cut off) from the left side. If the serial number length is longer than the value of the serial number, the number will be padded with spaces on the left side. ASCII serial numbers have any leading zeros suppressed; for example, a 4-character-long serial number with the value 2 will appear as ~~b~~~~b~~~~b~~2, where ~~b~~ indicates a space.

For serial numbers in binary format: (either Intel or Motorola format), the serial number can be from 1 to 4 bytes long. The maximum possible value of the serial number depends on the length:

LENGTH	MAXIMUM VALUE
1	255
2	65,535
3	16,777,215
4	4,294,967,295

If the serial number length is too small for the serial number value, the number will be truncated from the MSB (most significant byte) side of the number. If the serial number length is longer than the value of the serial number, the number will be padded with zeros on the MSB side.

Offset from Start of Search String

Enter the distance, in characters (bytes) from the start of the search string to the place where the serial number is to be written. In the example given on page 103, the serial number location is offset 9 characters from the start of the search string.

To place the serial number directly over the search string (and overwrite all or part of the search string), set the offset to zero.

Serial Number Format

This determines how the serial number will be written to the disc data during disc production:

ASCII

The serial number will be written as a string of ASCII numeric digits (0-9). Padding and truncation will occur as described above.

For the two binary format options, the following binary value (shown in hexadecimal) is used as an example to illustrate the byte ordering for each format (each box is one byte):

12	34	56	78

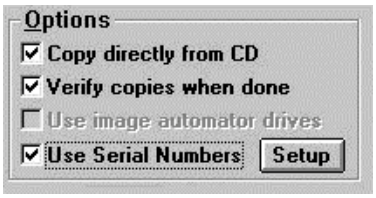
Binary (Intel Byte Order)
The serial number will be written as a binary value. Intel byte ordering places the least-significant bytes first from left to right. The following diagram shows the Intel byte order for each size of serial number, using the sample value above:

SIZE	BYTE ORDERING			
1	78			
2	78	56		
3	78	56	34	
4	78	56	34	12

Binary (Motorola Byte Order)
The serial number will be written as a binary value. Motorola byte ordering is simply from MSB (most-significant bit) to LSB (least-significant bit) from left to right. The following diagram shows the Motorola byte order for each size of serial number, using the sample value above:

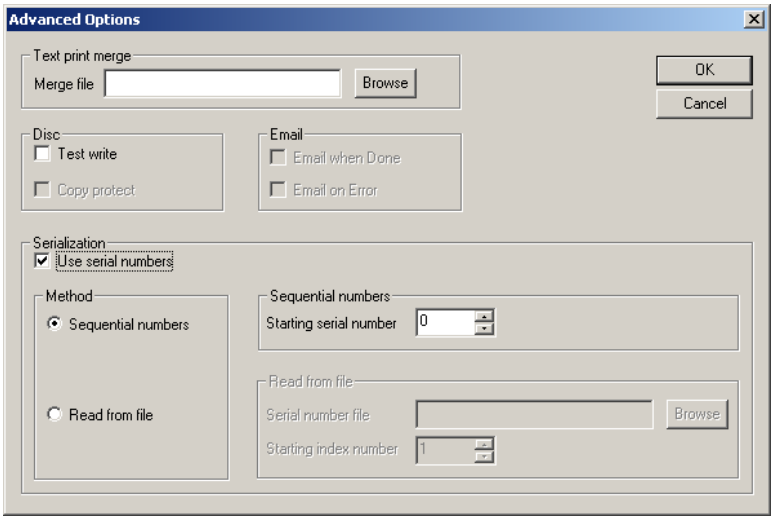
SIZE	BYTE ORDERING			
1	78			
2	56	78		
3	34	56	78	
4	12	34	56	78

After selecting the serial number formatting options, click the **Save** button to write the serialization information to the ImageMaker image file. After the file has been updated, click **Quit** to close **SNMASTER**. If you change your mind and don't want to make any changes to the image after all, just click **Quit**.



Running A Serialized Disc Production Job

After the image has been prepared with **SNMASTER**, it's ready to make serialized discs. Set up the production job as you normally would. (Instructions for running ImageMaker production jobs start on page 40.) Before you click the **`Start`** button, check the **`Use Serial Numbers`** checkbox in the **Options** box, as shown to the left. Click the **`Setup`** button next to it to open the serialization settings dialog, shown below.



Serialization Method

For standard serialization as described below, check the Sequential numbers item. (The other serialization method uses pre-constructed serial numbers placed in a file, and requires customized software to be used. For more information, you can request a technical document covering custom serialization from Microtech.)

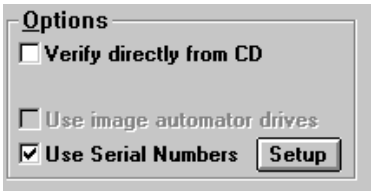
Starting Serial Number

Enter the beginning serial number for the batch of discs to be made in this production job. The serial number is incremented by 1 for each disc made.

After setting the options and closing the dialog (click the **`OK`** button), begin the job by clicking the **`Start`** button. Disc production will proceed normally, with serialization of all discs in the job done automatically.

Printing Serial Numbers on Discs

When you serialize discs, you can print each disc's serial number on the disc as part of the print layout. Place the system variable **`#Serial_number`** in a text item in the layout where you want the serial number printed. (Turn to page 77 for more information.) When you run the production job, each disc will be printed with its own serial number.



Verifying Serialized Copies

You can verify serialized disc copies just as you can any other discs made with ImageMaker. You can either verify copies as they are made (by checking the **`Verify copies when done`** item in the **Options** box), or you can choose to verify copies in a separate batch operation. If you verify serialized copies as a separate operation, you must check the **`Use Serial Numbers`** option in the **Options** box before starting the job.

If you verify as a separate operation, you don't need to open the **Serialization Settings** dialog (as described above) when setting up to make serialized copies. Since serial numbers are simply skipped over during verification, all the information needed for this operation is already contained in the ImageMaker image.

Network Setup

A Microtech production system can function in two basic ways: one is as a stand-alone disc duplication system, and the other is as a disc publishing resource that can be used to create custom discs. When used in this second function, one key requirement is that the Microtech production system must be accessible to any users who want to send jobs to it over a local area network. This chapter deals with setting up and using the disc production system.

Setting Up a Microtech Production System on a Network

While the network connection on a Microtech production system is generally "plug-and-play", it's possible that some network configuration may need to be done (changing IP addresses, DNS settings, domain names, etc.) A qualified network administrator can handle this task.

Before multiple users can employ the production system to send disc publishing jobs to, it must be set up on a network. The system is network-ready as it comes from the factory. It is a matter of plugging it into the network. The following configuration items must be dealt with before the system can be used on a network.

To establish a Microtech production system on the network, proceed as follows:

Connect a *Microtech production system to the network*

The production system comes equipped with a 10/100 Mbit Ethernet network controller. Plug the network cable into the back of the Microtech production system, using the connector labeled **Network**. When a Microtech production system is started up, it should appear on the network.

Share the Microtech production systems D: Drive

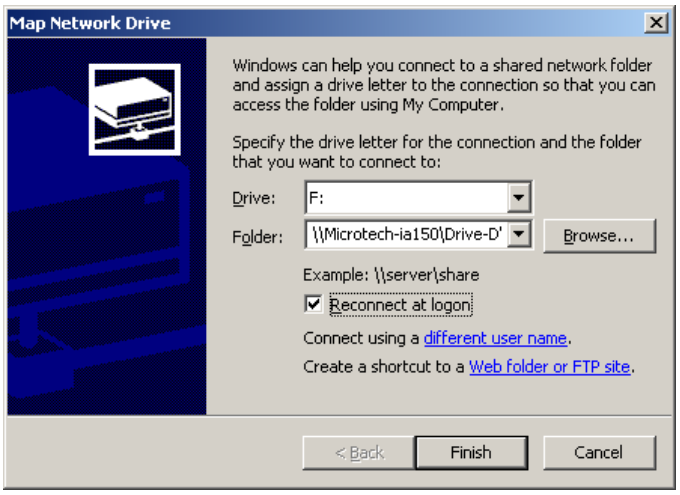
By default the D: drive on the Microtech production system is used to hold images and to submit jobs. This drive must be shared in order for jobs to be submitted to the system via the network. This may be done using Microtech's ***MyDisc*** application or via customer developed applications.

A batch file has been installed on every Microtech production system to facilitate permanently sharing this drive. All that is needed is to log in as an Administrator or ***ImageMaker*** operator and to run the batch file C:\Bat\ShareD.bat

Map a Microtech production system to a network drive on each user's system

To send disc production jobs to the production system, the user needs to be able to "see" the system from their workstation (a computer on the network). This depends on the operating system used on the workstation: the general case of computers using various versions of Windows (Windows 95/98/NT/2000 is covered here). Windows users map network drives through the **Windows Explorer** utility. Though the specifics vary, this function is generally accomplished through a **Map Network Drive** command (for Windows NT, this command is in the **Tools** menu). Make two selections: a drive letter (**H:**, **I:**, etc.) and a location on a remote

machine (in this case, a folder on the system where files are stored). These folders are shown in Explorer as a list of “shared directories”.


Map Network Drive
Windows can help you connect to a shared network folder and assign a drive letter to the connection so that you can access the folder using My Computer.
Specify the drive letter for the connection and the folder that you want to connect to:
Drive:
F:
Folder:
\\Microtech-ia150\Drive-D'
Browse...
Example: \\server\share
Reconnect at logon
Connect using a different user name.
Create a shortcut to a Web folder or FTP site.
< Back
Finish
Cancel

The illustration above shows how this is done using the Windows NT Explorer **Map Network Drive** dialog. Notice that the machine is named and that it has one mappable entry called **Drive-D**. (Once this is mapped, users will have access to all the folders on this drive. The important folders are listed below.)

Where Are Files Stored on the Microtech Production System?

Before mapping network drives, review the list of important folders accessible to users–on the production system.

Folder Drive-D\Jobs

The location ***CD-Remote*** looks for job order files. To start a disc production job, the job file (and other related files) must be written here. Configure any systems sending jobs to the Microtech production system (for instance, ***MyDisc*** users) to use this folder.

Folder Drive-D\Layouts

The location where disc printing layouts are stored (including any pictures used by those layouts) that will be shared by users on the network, as well as stand-alone disc duplication users on the production system itself.

Folder Drive-D\Images

The location where disc images are stored for disc duplication usage by **ImageMaker EZ**. Since hard disk storage space is limited, it is not recommended using this folder to store other disc images: these decisions should be made after determining the exact storage requirements of your site.

There are other folders on the volume **Drive-D**, some of which are only for internal usage by the system. If needed, folders can be added here. However, the Microtech production system should be treated differently from a standard network file server. Keep disc file

and folder "clutter" to a minimum to avoid maintenance problems. Users are well advised not to create and store their own personal files on the production system.

Configuring Users to Send Jobs to a Microtech Production System

After connecting the Microtech production system to the network, the only other configuration needed to let users send it disc production jobs will be on the client (user's) side. With the possible exceptions noted above, the host (disc production system) is ready to use.

For MyDisc users

The ***MyDisc*** Enterprise Disc Publishing software uses an automatic discovery process that allows it to find each ***ImageAutomator*** installed in the organization. No additional setup should be required.

For custom applications sending jobs to a Microtech production system

Since any custom application will submit jobs by placing job order files in the remote machine's job folder, ensure that the application puts its job files in the job folder on Microtech production system (**\\System\Drive-D\Jobs** in UNC notation).

Setting Up Email Notification for Events

A Microtech production system may be set up so that selected users will be notified via email messages when certain events occur with the system. There are two types of notification events:

1. **Job notification:** when a particular job finishes or when an error occurs with a particular job;
2. **"General system events"** (events affecting all jobs, such as running out of blank discs)

Both events may be sent to the same e-mail address or either event may be sent to a different address. Or,

To setup this feature, make entries in the CDR configuration file, **CDremote.cfg**. This is an ASCII text file, that can be edited with a plain text editor (e.g. the **Notepad** utility provided with Windows). This file is found in the folder **C:\Icdr-MJ** on the production system.

Identifying the Email Notification Account

To enable email event notification, identify the email server and the email account, which will be used to send messages. Both of these addresses must be valid on the network the production system is attached to. Here are the **CDremote.cfg** entries:

EmailServer = <server>:
<server> the name of the mail server used to send outgoing mail; for

example:
EmailServer = mail.globalcorp.com

EmailSender = <account>:
Identifies the mail account which will be used to send messages. It must be a valid email address in the form **user@domain**; for example:

EmailSender = joe@globalcorp.com. Sends address for all alerts.

Setting Up Email Event Notification

The first type of event notification (job completion and any errors during a job) is set up either in ***MyDisc*** (for publishing custom discs) or in ***ImageMaker* EZ** (for duplicating discs).

- For ***MyDisc***, see page 19 for details on setting program preferences for email notification.
- For ***ImageMaker* EZ**, see page 114 for details on setting program preferences for email notification.

These alerts will occur when a particular job ends or an error occurs with that job.

To enable **general system event** alerts, add another entry to the **CDremote.cfg** file:

EmailAlertList = <recipient list>

where the recipient list contains a list of all addresses to be notified of such events, where the addresses are separated by commas. For example,

EmailAlertList = joe@xyz.com, jenny@xyz.com, jasmine@xyz.com

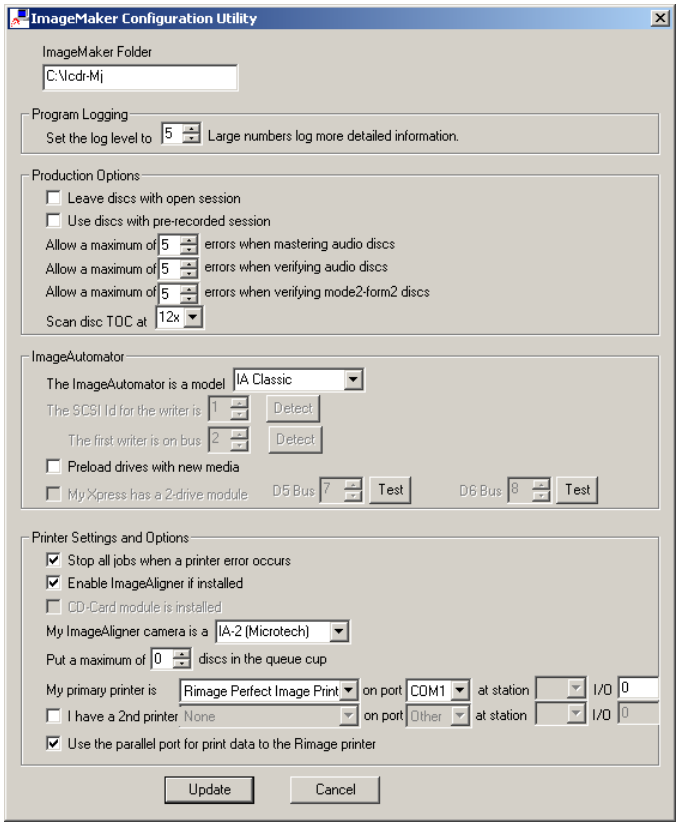
General system events are those such as the system running out of blank discs or the output spindles being full. A general system event does not pertain to any specific job

.

Printers

Configuring a Printer

If printers are changed on your system, or a new printer is installed, the system needs to know what kind of printer is being used. This is done by running the ***ImageMaker*** configuration utility. From the Windows **Start** button, select **Programs→ImageMaker→Configure ImageMaker**. This will open the configuration utility, whose main dialog is shown below.


ImageMaker Configuration Utility
ImageMaker Folder
C:\Icdr-Mj
Program Logging
Set the log level to 5 Large numbers log more detailed information.
Production Options
Leave discs with open session
Use discs with pre-recorded session
Allow a maximum of 5 errors when mastering audio discs
Allow a maximum of 5 errors when verifying audio discs
Allow a maximum of 5 errors when verifying mode2-form2 discs
Scan disc TOC at 12x
ImageAutomator
The ImageAutomator is a model IA Classic
The SCSI Id for the writer is 1 Detect
The first writer is on bus 2 Detect
Preload drives with new media
My Xpress has a 2-drive module D5 Bus 7 Test D6 Bus 8 Test
Printer Settings and Options
Stop all jobs when a printer error occurs
Enable ImageAligner if installed
CD-Card module is installed
My ImageAligner camera is a IA-2 (Microtech)
Put a maximum of 0 discs in the queue cup
My primary printer is Rimage Perfect Image Print on port COM1 at station I/O 0
I have a 2nd printer None on port Other at station I/O 0
Use the parallel port for print data to the Rimage printer
Update
Cancel

Microtech provides support for the XpressJet, Signature 4, Signature Pro and Prism PR13 printers.

Use the item marked **my disc printer is…** to change the current printer type. The **and is connected to …** item must also be set to the correct port, depending on the printer:

- For **Rimage Perfect Image** (thermal transfer) printers, use **COM**
- For **Signature** (inkjet) printers, use **LPT 1**.
- For Microtech **XpressJet** (inkjet) printer, use **LPT 1**

For Rimage printers we suggest using a parallel or USB cable for transferring the data as well as the serial cable for control. If you have either of these cables installed, check the box labeled "Use the parallel port for print data to the Rim age printer".

Be sure to click the **Update** button before closing the configuration utility.

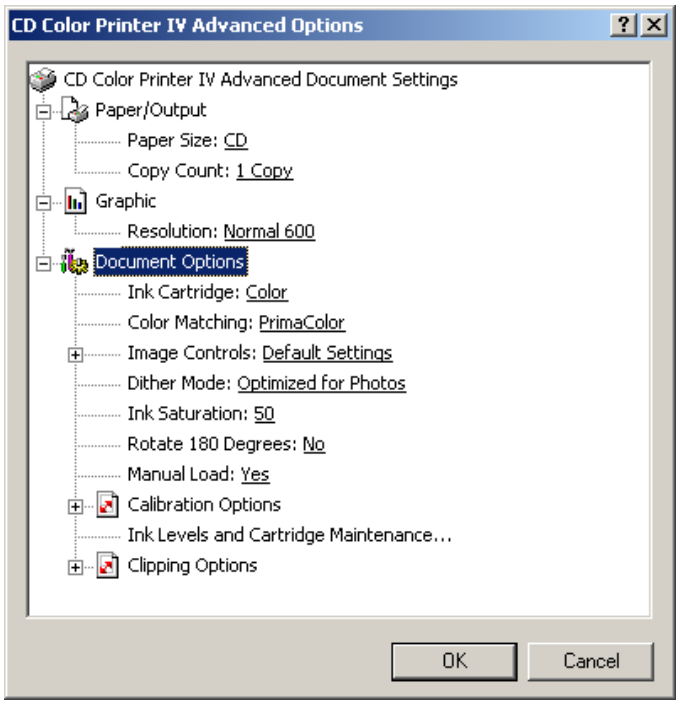
Changing Disc Printer Driver Settings

This section explains the software settings available through the device drivers for the disc printers available with a Microtech production system. Each printer has its own set of options.

The settings for both printers are accessed through the Windows **Start** button, at the lower left of the screen. Click the button, then select **Settings** from the menu that pops up. From the next small menu, select **Printers**. This will open a list of available printers. Select the printer to be used and change settings. To get to the printer's settings, right-click on the printer's icon (or list entry). Depending on the printer, select either **Printing Preferences** or **Properties** from the pop-up menu. Further instructions follow for each printer type below.

Signature Pro Printer

Follow the instructions given above to open the list of available system printers. From this list, select your printer(s), right-click on the icon (or list entry), and select **Printing Preferences** from the pop-up menu. The Document Defaults Properties dialog will open. There are two tabs in this dialog: select the **Advanced tab** by clicking on it. You'll see the following choices.



There are several items in this tab. Only the following settings need to be changed in order to obtain the best print results on your particular blank media.

Resolution

This sets the printing resolution, or how many dots per inch will be printed. The higher the resolution, the finer the dots and the higher the image quality. Higher resolution settings take more time to print. The available resolutions are **Fast 600**, **Normal 600**, **Best 600**, **Presentation 1200, and Super Photo 2400**. (The numbers are dots per inch.)

Ink Cartridge

Ensure that the setting of this item corresponds to the type of ink cartridge installed in the printer (**Monochrome Black, Color, or Color + Black**).

Color Matching

There are three options, None, Algebraic, and PrimaColor. Testing may be required to find the setting that best meets expectations.

Dither Mode

This changes the dithering pattern the printer uses. If photos are being printed, use the setting **Optimized for Photos, for smoother printing**. Otherwise, use the setting **Optimized for Graphics**, for sharper, harder edges.

Ink Saturation

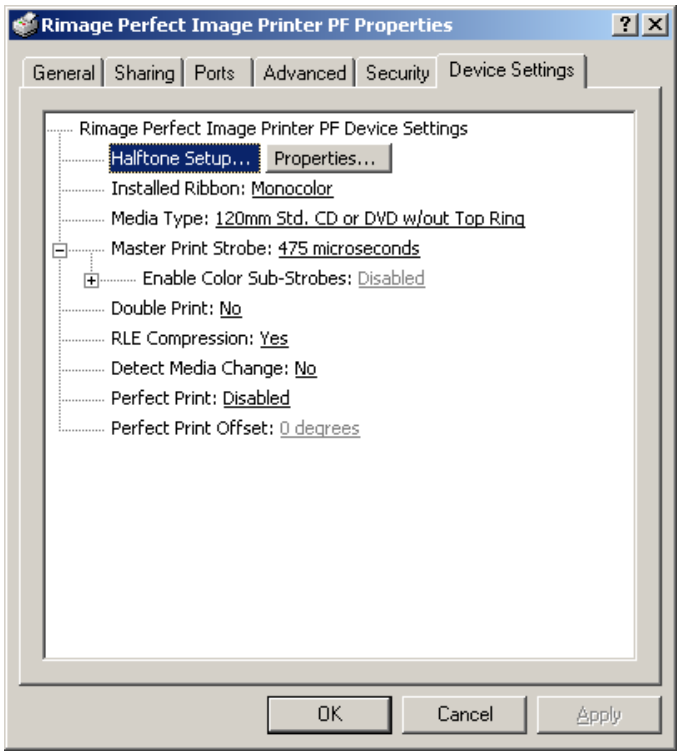
The default setting is 50 (on a scale of 0 to 100), Higher numbers increase the quantity of ink used during printing. Lower numbers decrease the quantity of ink used.

When changes are complete, click **OK** in this dialog to close it and save the settings. (Click **Cancel** to close it without changing any settings.)

After changes have been made and the new settings saved, print a test disc and visually inspect the results. If necessary re-open the **Printing Preferences** window and make further changes.

Perfect Image Printers

Follow the previous instructions (page 118) to open the list of available system printers. Select the printer labeled **Rimage Perfect Image Printer PF**. Right-click on the icon (or list entry), and select **Properties** from the pop-up menu. The **Properties** dialog will open. This dialog has several tabs: select the one labeled **Device Settings** by clicking on it.



There are several items in this tab. Only the following settings need to be changed in order to obtain the best print results.

Installed Ribbon

Make sure that this setting corresponds to the type of ribbon installed in the printer ().
(Monocolor, Color Three Panel, or Spot Color Two Panel)

Media Type

There are at least seven disc options listed here. Make sure to select the one that best matches your disc shape and type.

Print Strobe

This controls the length of time that heat is applied to the ribbon to transfer pigment to the disc: To increase print head life, use the lowest possible setting that maintains the printing intensity/quality desired.

The optimal print strobe setting depends on the type of media (discs) being printed. Refer to the document titled "**Recommended Settings by Media Type for the CD Printer**" for values for this setting. This document accompanies the Rimage manual, *Thermal CD Printer User Guide*.

Double Print

This option, if enabled, makes the Perfect Image printer print each image twice, resulting in darker prints.

RLE Compression

This controls whether or not data sent to the printer is compressed. Set it to **Yes**.

Detect Media Change

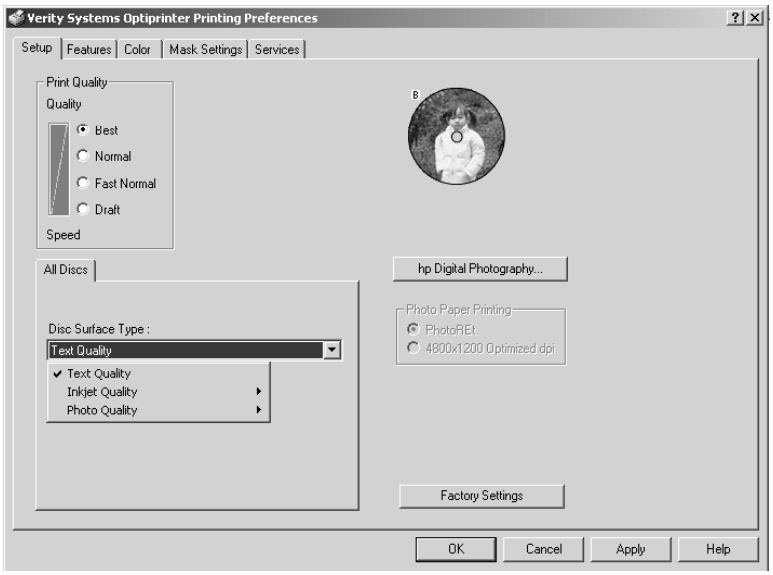
This controls whether the sensor–which detects when a disc has been taken out of the printer's tray–is active or not. This option must be set to **No** for proper operation.

After making any necessary settings changes, click on the **Scheduling** tab to open it. This tab contains an option labeled **Print directly to the printer**. Make sure this option is enabled (checked). When changes are complete, click **OK** in this dialog to close it and save the settings. (Click **Cancel** to close it *without* changing any settings.)

After changes have been made and the new settings saved, print a test disc and visually inspect the results. If necessary re-open the **Document Defaults** window and make further changes.

XpressJet Printers

Follow the previous instructions (page 118) to open the list of available system printers. Select the printer labeled **XpressJet Printer**. Right-click on the icon (or list entry), and select **Properties** from the pop-up menu. You can choose a number of printing options on your XpressJet Printer from the Printer Preferences menu. See the XpressJet printing manual for detailed instructions.



Print Quality

There are four options to choose from: Best, Normal, Fast Normal and Draft. Best provides the highest quality printing at the slowest speed. As the print speed increases the print quality decreases with Normal, Fast Normal and Draft. Draft provides draft quality at the fastest printing speed. It is common practice to run test samples in Draft mode, saving both time and ink. Once the desired results are met, increase the print quality to the desired setting.

Disc Surface Type

The choice you make here will depend on the image you wish to print. If you are simply printing text onto a disc, then select Text Quality. If you are printing graphics, you would probably select Inkjet Quality. For images where only the very best quality will do, such as high-resolution photos, select Photo Quality.

ImageAligner

Calibrating the Camera Alignment for *ImageAligner*

For the ***ImageAligner*** option to work properly, the image captured by the digital camera must be correctly aligned so the pattern-matching routines know where to find the disc image. The process of lining up the camera is called *calibration*, and is done in software by ***DiscPrint*** (AKA the Disc Layout Editor in ***ImageMaker* EZ**). Initial calibration of ***ImageAligner*** is done by the Microtech Technician at the time of installation.

When Does Camera Calibration Need to be Done?

ImageAligner needs to be calibrated if the camera has been moved or if the printing on the disc surface is not accurately placed.

Camera calibration is best done using the special alignment target disc is supplied with each system equipped with ***ImageAligner***. This is a black plastic disc, the size of a standard disc, with a white circle around the outside edge and white crosshairs in the center. (There is a small cutout above the crosshairs to clear the clamping pin of the Perfect Image printer.)

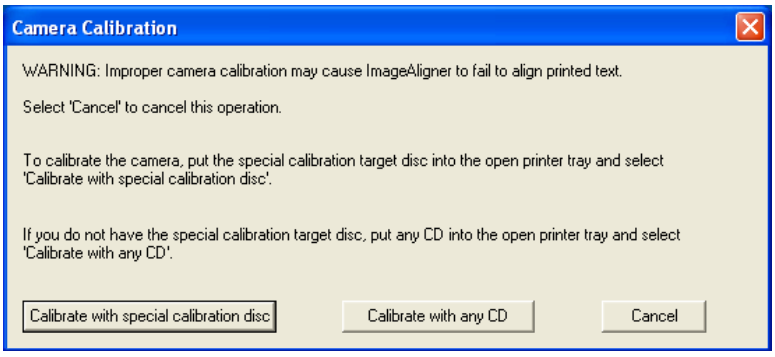
It looks like this:

If you do not have this alignment target disc, any ordinary disc may be used. The target disc makes this process easier and more accurate.

Follow these steps to calibrate the *ImageAligner* camera:

1. **Put the special calibration target disc in the printer tray.**
   Open the printer tray and place the disc in the tray. Make sure that the printer's center alignment pin fits inside the small circular cut-out near the center of the target disc. The alignment procedure will pull this alignment pin against the disc to secure it.

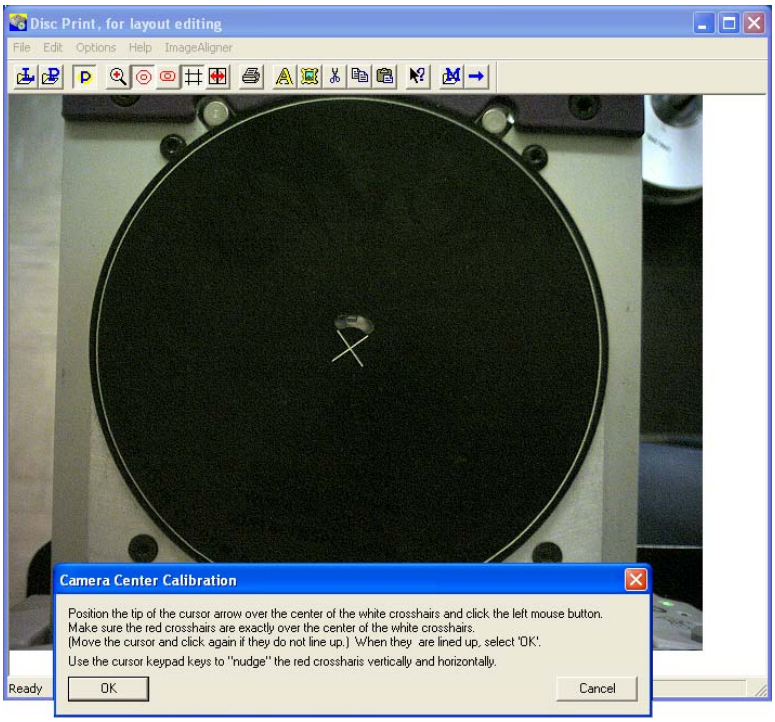
2. Start the calibration process.
   Start the *DiscPrint* utility. Select ImageAligner→Special→Calibrate Camera. The following dialog will appear:


Camera Calibration
WARNING: Improper camera calibration may cause ImageAligner to fail to align printed text.
Select 'Cancel' to cancel this operation.
To calibrate the camera, put the special calibration target disc into the open printer tray and select 'Calibrate with special calibration disc'.
If you do not have the special calibration target disc, put any CD into the open printer tray and select 'Calibrate with any CD'.
Calibrate with special calibration disc
Calibrate with any CD
Cancel

If using the special calibration target disc, click **Calibrate with special calibration disc**. Otherwise, click **Calibrate with any disc**. When using the target disc, there are two steps to the calibration process: (If using an ordinary disc, skip to the second step.)

1. Locate the exact center of the target disc
2. Locate the outside circle on the target disc

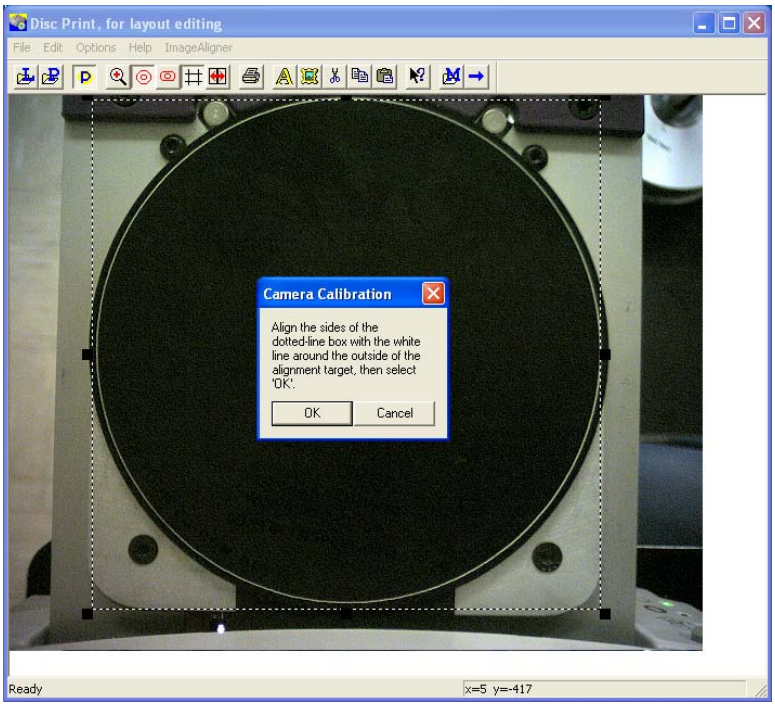
The dialog for the center-locating step will appear, as shown below.


Disc Print, for layout editing
File Edit Options Help ImageAligner
Camera Center Calibration
Position the tip of the cursor arrow over the center of the white crosshairs and click the left mouse button.
Make sure the red crosshairs are exactly over the center of the white crosshairs.
(Move the cursor and click again if they do not line up.) When they are lined up, select 'OK'.
Use the cursor keypad keys to "nudge" the red crosshairs vertically and horizontally.
OK
Cancel
Ready

Position the tip of the cursor arrow over the center of the white crosshairs and click the left mouse button. Make sure the red crosshairs are exactly over the center of the white crosshairs. (Move the cursor and click again if they do not line up.) when they are lined up select **OK**. Use the cursor keypad keys to “nudge” the red crosshairs vertically and horizontally.

When the pairs of crosshairs are aligned, click **OK** to accept this part of the calibration.

The dialog for the edge-locating step (shown below) will appear.


Disc Print, for layout editing
File Edit Options Help ImageAligner
Camera Calibration
Align the sides of the dotted-line box with the white line around the outside of the alignment target, then select 'OK'.
OK
Cancel
Ready
x=5 y=-417

The black "handles" located at the center of each side of the dotted line box are used to move the box up, down, left and right.
After the calibration is accepted, the display will show the calibration target disc with a red circle drawn around the edge. If the calibration was done correctly, this circle will line up almost exactly with the white circle from the target disc. If not, redo the calibration procedure until it does.

Calibrating the Disc Printer for *ImageAligner*

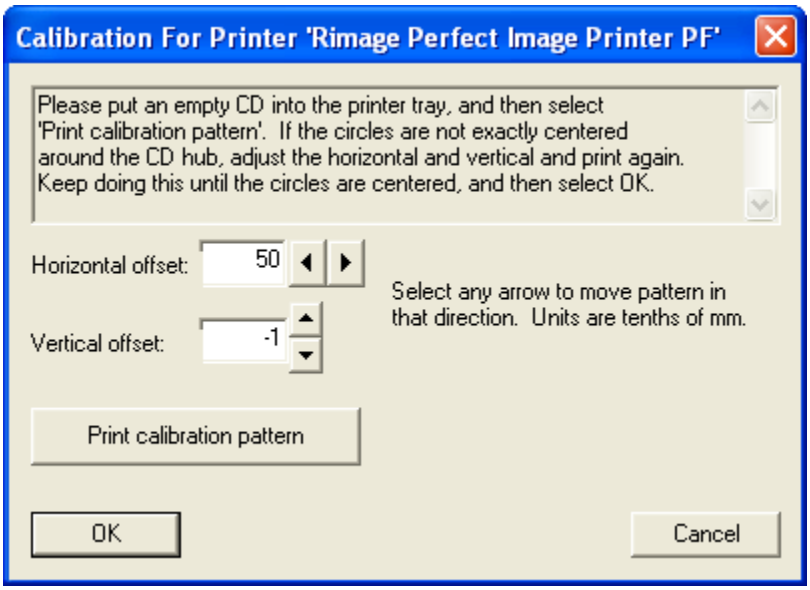
In order for ***ImageAligner*** to accurately line up printed text on pre-printed discs, the printer must be correctly aligned. This means telling the software exactly where a given point (dot) will physically print on the surface of a disc.

When Does Printer Calibration Need to be Done?

The Perfect Image disc printer is accurately aligned at the factory, and will retain this alignment reliably. However, whenever the printer's print head is changed, the alignment needs to be rechecked. Follow the procedure below.

1. Have a few blank (unprinted) discs available; printer calibration requires printing a test pattern on a disc. If the ***ImageMaker*** MJ software is active, make sure no jobs are running. Otherwise, open the ***DiscPrint*** utility to do the alignment.

2. Place a blank disc in the disc printer tray and close the tray. (With the tray open, you'll need to press the blue load button twice, once to lock the disc, then again to load it.) From the ***DiscPrint*** **File** menu, select **Calibrate Printer**. The following dialog will appear:


Calibration For Printer 'Rimage Perfect Image Printer PF'
Please put an empty CD into the printer tray, and then select 'Print calibration pattern'. If the circles are not exactly centered around the CD hub, adjust the horizontal and vertical and print again. Keep doing this until the circles are centered, and then select OK.
Horizontal offset:
50
Vertical offset:
-1
Select any arrow to move pattern in that direction. Units are tenths of mm.
Print calibration pattern
OK
Cancel

Press the **Print Calibration pattern** button. The disc pattern shown below will be printed.

If for some reason the circle around the hub isn't visible, try using the outer circle just inside the edge of the disc.

The circle printed around the hub of the disc must be centered. If the circle around the hub is off center, move the circles by changing the numbers in the horizontal and vertical offset controls. Type new numbers or click the arrows in the direction to move the calibration pattern. The offsets are given in **tenths of a millimeter**. Change the offset, then print another disc and check it. Do this until the circles are centered on the disc. Finish the calibration procedure by clicking **OK**; this saves the calibration settings.

Using *ImageAligner* to Print Text on Pre-Printed Discs

ImageAligner is an optional feature. Contact Microtech or your sales representative for more information.

IMAGEALIGNER is an optional feature that allows text to be printed on the surface of discs that are already pre-printed. Using a camera mounted over the printer, this facility automatically aligns the text to be printed with the pre-printed graphics on the disc. The result is a disc that looks as if the text and other graphics were printed together.

ImageAligner only works with the Perfect Image or Primera (thermal transfer) printers. It does not work with the Signature series of inkjet printers.

Note

"*Pre-printed graphic*" means anything printed on a disc *before* it is printed by a Microtech production system**.** In most cases, this will be a silkscreen printed graphic. It can be anything: pictures, text, even printing which covers the entire disc. A *blank pre-printed disc* has this pre-printed graphic on it, but hasn't yet been printed by the disc production system. Printing pre-printed discs is a two-part process:

If the printed circles don't print dark enough, try setting the Perfect Image printer to **Double Print**. (See page 139 for details.) If you do this, be sure to return the printer to its normal setting after calibration is done.

1. Before a pre-printed disc can be printed, ImageAligner must be "trained" on its pre-printed graphic. This process consists of taking a "snapshot" of a blank pre-printed disc with the camera, and then manually aligning this snapshot on-screen. After this, ImageAligner will align printed text to this position when discs are printed

   Training on the pre-printed graphic is part of the layout creation process: start with a previously created layout, or train first, then create the layout. When the layout is saved, the trained pre-printed graphic will be saved along with the layout's text.

If you have a choice of ink finishes when printing over the entire surface of the disc, use a duller, rather than a glossier ink. This will reduce problems with glare when printing with ***ImageAligner.***

2. As discs are printed as part of a production job, ImageAligner takes a snapshot of each disc as it is placed in the printer tray. Pattern-matching routines compare this snapshot to the one "trained" on; from this comparison it computes the amount that the material to be printed must be rotated in order to line up perfectly with the pre-printed graphics on the disc sitting in the tray. Before the content is printed, it is rotated by the ImageAligner software before being sent to the printer.

Designing Pre-Printed Disc Artwork for *ImageAligner*

Users who print on pre-printed discs can design their own discs and have them printed (silk-screened) for use with ***ImageAligner***. This section explains how to design discs that will give the best printing results when using ***ImageAligner*** to print text over them as disc copies are being made.

When designing disc artwork it is important to avoid potential printing problems caused by printing too close to pre-printed elements. A less critical issue is providing enough "clues" for ***ImageAligner*** to work properly in aligning text.

ImageAligner Considerations for Pre-Printed Disc Designs

Cover the entire surface of the disc with color - if possible

When creating a disc design, it's best to have the entire disc printed in a "base" color, then print other colors over it. This helps ***ImageAligner*** as it reduces the possibility of glare from the reflective disc surface interfering with the pattern-recognition process used when aligning and rotating text. Another alternative is to start with coated discs, which already have a uniform color all over the top surface (usually white, but other colors are available).

Provide enough alignment "clues"

ImageAligner needs a certain amount of visual information to be able to determine how far to rotate printed text. Almost any kind of graphic element on the disc will serve this purpose; there must be elements that are not concentric with the disc. Concentric elements are circles on the disc that share their center with the disc. The worst case for ImageAligner is a disc with only circular elements on it. In this case, there is almost no visual information on the disc, that would tell ImageAligner which way, the disc should be rotated. Avoid disc designs of this type.

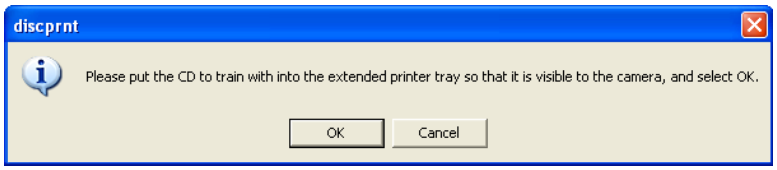
Training *ImageAligner* On a Pre-Printed Disc

Training should only be done when no disc production jobs are being run on a Microtech production system.

Training to print pre-printed discs is part of the process of creating a disc printing layout. The layout may be done first and then trained on a pre-printed disc, or a new layout may be started (choose **New Layout** from the **File** menu), trained then complete the layout. For the training process, follow these steps:

1. **Place the blank pre-printed disc in the printer tray**
   Open the printer tray by pressing the tray-open button on the front of the printer. Place the disc in the tray. On the Perfect Image printer ensure that the disc is not on top of the disc-gripper pins. These pins must close down and hold the disc in place while the snapshot is taken.

2. **Start the training process**
   Go to the Layout Editor. From the **ImageAligner** menu, select and click on **Train CD**. The following dialog will appear. Click **OK** in the dialog to proceed.


discprnt
Please put the CD to train with into the extended printer tray so that it is visible to the camera, and select OK.
OK
Cancel

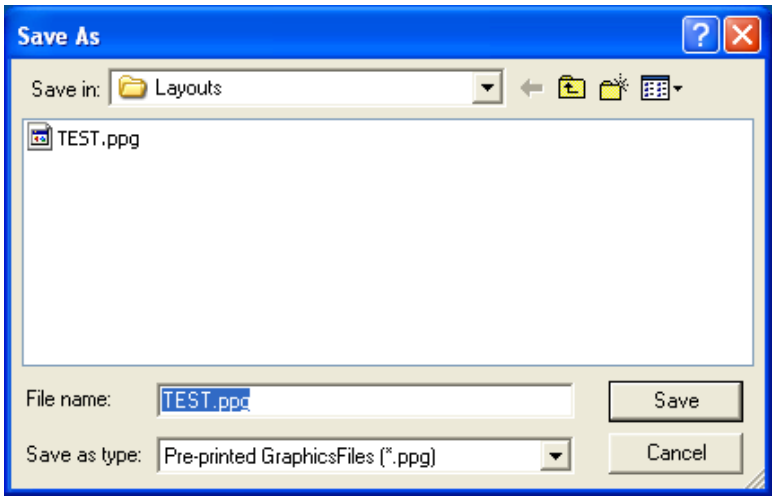
3. The camera will acquire the image of the disc ("take a snapshot"). When the image has been captured, it will appear on screen with a training dialog on top of the Layout Editor window, as shown below.

4. Using the sliding control to rotate the image until it appears to be level – in the proper orientation – on the screen. The button can be dragged to rotate the image, or it can be rotated in small increments by clicking in the control bar (moves by 1º) or the arrowed buttons at the right and left (moves by 1/10º).

Tip: You can use the image rotation dialog box as a straightedge to line up against elements in the disc image by moving it around the screen.

5. Other buttons in the toolbar can be used to adjust the view; these include those that toggle the disc outline and grid displays. To see the layout more closely, use the Zoom check item in the Options menu (or the toolbar button).

6. When the image is aligned on screen as it should be, click OK to save the orientation. The following dialog will appear. A name is given here to save the pre-printed graphic file (the image of the disc just "trained" on). Use the dialog to navigate to the folder where the image is to be saved. Type a name in the File name: field, then click Save.



The disc printing layout **must** be saved to associate this pre-printed graphic image with the layout. After it has been saved it will automatically be used to print pre-printed discs when discs are made. Instructions for printing pre-printed discs start below on page 135.

A trained pre-printed graphic may be saved (**.PPG** file) for later use with a layout. Work on the layout may be completed later. The pre-printed graphic is then loaded by using the pre-printed graphic button on the toolbar (shown to the left here). When the layout is saved, that pre-printed graphic will then be associated with it.

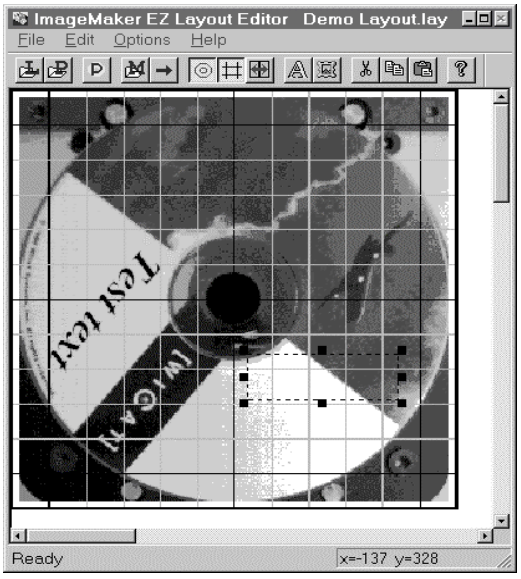
Checking the Training Alignment

After training and saving the results, test the training to make sure it will work properly when actually printing discs. Use the **Check Alignment** item on the ***ImageAligner*** menu to do this.

Before checking the alignment, open the printer tray and rotate the disc being trained on to a new position, to give ***ImageAligner's*** positioning routines a chance to work. Lock the disc in the printer's alignment pins by pushing the printer button. Select **Check Alignment** and wait for the software to "grab" the image.

The alignment-check view shows the disc in its actual orientation in the printer tray, with the text to be printed rotated to align with the pre-printed graphic on the disc. The following two illustrations show how this works. The first picture shows the layout being edited, with the pre-printed graphic rotated into the correct alignment and a line of text placed on the disc. The second picture is the **Check Alignment** view. Notice how the text has been rotated into the correct position with respect to the disc image.

Editing layout with pre-printed disc



Rotated image showing alignment of printed text

Displaying the Pre-Printed Graphic During Training

The display of the pre-printed graphic may be turned on and off by using the pre-printed display toggle button in the toolbar, shown below. When this button is depressed, the pre-printed graphic will show in the Layout Editor workspace. Click the button again to remove the pre-printed graphic from the display. (The pre-printed graphic will still be active; it will not however, be visible.)

Printing Pre-Printed Discs Using *ImageAligner*

After ***ImageAligner*** has been trained using a blank pre-printed disc, the printing to be done will automatically be aligned to the pre-printed graphics on the discs made. The layout file contains an internal reference to the pre-printed graphic (through the **.PPG** file). Every time this layout is used to print discs, ***ImageAligner*** will activate and orient the text before printing it over the pre-printed graphic. When pre-printed discs are printed:

A disc is dropped into the open printer tray
A command is given to the printer to close the alignment pins on the disc, leaving the tray open, so that the disc is properly positioned under the camera.

A "snapshot" of the disc is taken by the camera
The Layout Editor analyzes this image, comparing it to the trained pre-printed graphic. From this comparison, the layout editor determines how far to rotate the text to be printed in order for it to be lined up with the pre-printed graphic. Both the camera image acquisition and pattern-matching steps take several seconds.

Before the text is printed, it is rotated in memory to match the orientation of the disc in the printer tray
After rotation, disc printing proceeds normally. The actual printing step takes the same amount of time as when ***ImageAligner*** is not used.

Important Note:
When using IMAGEALIGNER, all disc production jobs being run on a **Microtech System** must use discs with the same pre-printed graphic on them. *You cannot intermix discs with different pre-printed graphics (or with no graphic at all) on the input spindle(s) of the production system.*

Using an IMAGEALIGNER Layout with Non-Pre-Printed Discs

After creating a disc printing layout, train ***ImageAligner*** to print on a pre-printed disc, choosing to use that layout to print on blank, non-pre-printed discs. Make a new copy of the printing layout and remove the reference to the pre-printed graphic (**.PPG** file) that is used to do image alignment. Proceed as follows:

1. Ensure that the layout is still loaded. Use the pre-printed graphic toggle button in the Layout Editor to remove the pre-printed graphic display to see the layout. Choose **Remove pre-printed graphic** from the **File** menu to remove the link to the pre-printed graphic from the layout.

2. Create a new layout by saving the current layout with a different name. Select **Save** from the **File** menu; in the **Save As** dialog, pick a new name for the layout. (The layout may be put into a different folder.) **Caution**: do not save the layout under the existing name, or the pre-printed graphic information will be lost.

Troubleshooting

Microtech production systems are carefully designed to deliver reliable disc production service. This chapter is a guide to potential problems and suggestions on how to correct them.

This chapter is organized into sections dealing with specific potential problems.

Determining If there is a Problem

When a job stops because of an error, the system requires your attention. Such jobs will be flagged in the job list display area of the ***ImageMaker* EZ** screen with a status of **Error**.

Even when disc write errors occur during a job, the job may still run to completion: if bad copies are made, the system will continue to attempt to make good copies, until the requested number of good copies are done. In this case, the job will be reported as having completed successfully, but with a certain number of failed discs (which will be on the reject spindle).

For more information about jobs that fail (or any job, for that matter), click on the job entry in the job list. Additional information about the job will appear at the top of the window.

When finished reading the job information, the display must be closed to continue using **ImageMaker EZ**. To keep this job status information for later reference, click **OK**. Otherwise, click **Delete Job** to remove the job entry and continue. (To remove all completed jobs from this listing, check the item marked **Delete All Completed Jobs** before clicking this button.)

Disc Read Errors

Problem

Note: Do not confuse verify errors with read errors: verify errors are caused (usually) by erroneous data being written to a disc copy. When this data is compared to the original data, it fails the comparison test, causing the error to be shown.

A read error occurs when the reader drive encounters a bad spot on a disc. Disc read errors can occur whenever a disc reading operation is being done. This includes making disc images, making disc copies directly from disc, and verifying discs (either originals or copies) data disc recording techniques, audio discs are more likely to encounter errors when being read.

Solution

Check the disc for any sign of physical damage such as scratches. Wipe the disc in a linear way with a lint-free cloth in order to remove dust or scratches. If the disc itself is the problem then the only solution may be to try a different disc if one is available. If the disc does not appear to be the problem, try reducing the drive read speed and restart the operation. (See the relevant description of operation options on page 42.) It's possible that the disc being read is damaged.

Disc Write Errors

Problem

The most common cause of disc write errors are defective or low quality blank media.

Solution

Microtech recommends Mitsui blank CD-R and DVD-R media for all publishing needs.

Disc Verify Errors

Problem

When using the verify option with disc operations, the data from which copies are being made (either from disc or to disc) is compared to the original data. The data must match exactly in order to pass the verification test. If not, either the disc being made or the job will be rejected.

Verification failures can stem from either disc read errors or disc write errors, depending on the operation being done. If making an image from disc, then the only possible cause will be a read error. If making copies directly from disc, either a read or write error could cause verification to fail.

Solution

Depends on whether the verification failure was due to a read error or write error. If the problem was a read error, follow the same suggestions given for disc read errors. If it was a write error, follow the suggestions given for disc write errors. Here's a guide to determining the source of the problem:

- **If the operation was making disc copies from an image**, then it's likely a disc write error.
- **If the operation was making disc copies directly from a disc**, it could be either a disc read or disc write error. Handle it as a disc read error first (retry the operation with a lower disc read speed).
- **If the operation was making a disc image from a disc**, then a disc read error is likely to blame.

Disc Handling Problems

Problem

Disc handling problems are obvious, such as discs not being picked up from the input spindle, discs not being placed properly on a spindle, drive, or printer, or other physical problems.
In most cases, the problem is that **the system is out of alignment**. The positions where the system is set to pick discs up and drop discs are not where they should be.

Solution

Go through the Microtech production system calibration procedure carefully. Resume using the system, and watch it carefully to make sure the problem has been corrected.

Printing Problems

Printing problems with a Microtech production system can range from poor printing results to discs that do not get printed at all. Due to the nature of the disc printing process, this manual can only deal with a limited subset of problems. The most likely ones will be covered here: for detailed information, please refer to the manuals for your specific printer (either Signature or Perfect Image).

Problem

Printing problem–Blank discs being produced.

Solution

The printer may have run out of ribbon (Perfect Image) or ink (Signature). Replace the ribbon or ink cartridge, following the manufacturer's procedure in their manual.

Problem

Printing problem– error pop-up states either the layout or a picture in the layout is missing.

Solution

Either select a different existing layout, create a new layout, or find the layout if it has been moved somewhere else on the hard disk (or network file system). If the problem is a missing picture, the same applies to the image file containing the picture

Problem

Printing problem–Printer not responding.

Solution

If the printer becomes non-responsive due to some other error condition, the first thing to do is to cycle the power on the printer (turn the power off, wait at least 15-20 seconds, and turn it back on), and retry the operation.

Another possible cause for a printer not to respond is that one or more cables have become loose or detached from the printer. Check the connections both at the back of the printer and the back of the production system to ensure they are securely plugged in.
If the printer remains non-responsive, shut down the Microtech production system entirely (including powering down the printer), restart the system, then retry the operation.

Contacting Microtech Technical Support

If after following the above suggestions the problem persists, contact Microtech for help. Before doing so, it is helpful to be prepared. Please have the following information ready:

1. Exactly what operation was in progress when the problem occurred
2. What kind of blank media is being used (if the problem is disc-related)
3. What kind of disc is being copied or created
4. Any history of problems (Microtech keep's track of the problems you report to us)
5. Any other relevant information

In addition, the technical support staff may need more information from the system, such as error log data. The staff will explain how to get this information to us.

Technical support can be contacted at:
Microtech Systems
2 Davis Drive
Belmont, CA 94002
650-596-1900
Hours: 7:30 a.m. – 5:30 p.m. PST
mailtosupport@microtech.com
http://www.microtech.com

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